EXHIBIT B

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

PLANNED PARENTHOOD SOUTH ATLANTIC, *et al.*,	)	
Plaintiffs,	)	
v.	)	
JOSHUA STEIN, *et al.*,	)	Case No. 1:23-cv-00480-CCE-LPA
Defendants,	)	
and	)	
PHILIP E. BERGER, *et al.*,	)	
Intervenor-Defendants.	)	

DECLARATION OF CHRISTY M. BORAAS ALSLEBEN, M.D., M.P.H., IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

I, Christy M. Boraas Alsleben, M.D., M.P.H., declare as follows:

1. I am a board-certified obstetrician-gynecologist ("OB/GYN") licensed to practice medicine in Minnesota. I provide abortions and other reproductive health care at the University of Minnesota Medical Center, a hospital in Minneapolis, Minnesota. I have worked as an OB/GYN at the University of Minnesota Medical Center since 2015. I provide second trimester abortions at the hospital one day per week.

2. I also provide first and second trimester abortions at outpatient health centers. I have worked at M Health Fairview Women's Clinic since 2015 and Whole Woman's Health Minnesota since 2014, both in Minneapolis, Minnesota, and at Planned Parenthood North Central States in St. Paul, Minnesota since 2014. I provide abortions at

the outpatient centers 1.5 days per week. I am also the Associate Medical Director and Director of Research at Planned Parenthood North Central States, which includes Minnesota, South Dakota, North Dakota, Iowa, and Nebraska.

3. Further, I am a faculty member at the University of Minnesota Medical School, and I provide education for trainees in the Department of Obstetrics, Gynecology and Women's Health. I also hold multiple consulting positions, including for the American College of Obstetricians and Gynecologists ("ACOG")—the leading U.S. professional association of OB/GYNs—and the Minnesota Department of Health. I am a member of several professional organizations, and have received honors and awards for my research, teaching, and public service. I have co-authored nearly twenty peer-reviewed research publications, including on the topics of medication abortion for pregnancies of unknown location and history-based screening to determine eligibility for medication abortion and to help rule out ectopic pregnancy.[1]

4. I earned a B.A. in Biology and English from St. Olaf College in 2001, a Masters in Public Health from the University of Minnesota School of Public Health in 2004, a doctorate from the University of Minnesota Medical School in 2008, and completed my residency in Obstetrics and Gynecology at The Ohio State University

[1] *See, e.g.*, Karen Borchert, Christy M. Boraas et al., *Medication Abortion and Uterine Aspiration for Undesired Pregnancy of Unknown Location: A Retrospective Cohort Study*, 122 Contraception 109980 (2023); Ushma D. Upadhyay, Christy M. Boraas et al., *Outcomes and Safety of History-Based Screening for Medication Abortion: A Retrospective Multicenter Cohort Study*, 182 J. Am. Med. Ass'n Internal Med. 482 (2022); Holly A. Anger, Christy Boraas et al., *Clinical and Service Delivery Implications of Omitting Ultrasound Before Medication Provided Abortion via Direct-To-Patient Telemedicine and Mail in the US*, 104 Contraception 659 (2021).

Medical Center in Columbus, Ohio in 2012. I also completed a fellowship in complex family planning at Magee-Womens Hospital at the University of Pittsburgh in 2014. In addition to my master's degree, I have a certificate in clinical research from the Institute for Clinical Research Education at the University of Pittsburgh, finished in 2014, and I completed a fellowship in reproductive health advocacy from the Leadership Training Academy, Physicians for Reproductive Health, also in 2014. I became board-eligible in obstetrics and gynecology in 2012 and board-certified in 2017.

5. The opinions I state here are based on my education, clinical training, experience as a practicing physician, regular review of medical research in my field, and regular attendance and presentation at professional conferences, including conferences for abortion providers. The literature considered in forming my opinions includes, but is not limited to, the sources cited in this report.

6. A copy of my *curriculum vitae* is attached as **Exhibit 1**.

Summary of Opinions

7. I submit this Declaration in support of Plaintiffs' Motion for Summary Judgment against two components of North Carolina Session Law 2023-14 ("S.B. 20") (codified as amended by Session Law 2023-65 ("H.B. 190") at N.C. Gen. Stat. art. 1, ch. 90 (the "Act")), which bans abortion after twelve weeks of pregnancy with narrow exceptions.

8. Specifically, I understand that the Act allows abortions in the case of rape or incest through 20 weeks of pregnancy, and abortions in the case of a "life-limiting anomaly" through 24 weeks of pregnancy. However, I also understand that the Act

requires that an abortion provided after the twelfth week of pregnancy in cases of rape, incest, or "life-limiting anomaly" be provided in a hospital, not an outpatient clinic (the "Hospitalization Requirement"). I understand that if these requirements are permitted to take effect, PPSAT and other outpatient abortion providers in North Carolina will be barred from providing abortion care after the twelfth week of pregnancy to survivors of rape or incest and to patients who have received a diagnosis of a "life-limiting" anomaly.

9. I also understand that the Act requires that a physician providing an "abortion-inducing drug," among other things, "[d]ocument in the woman's medical chart the . . . existence of an intrauterine pregnancy" (the "IUP Documentation Requirement"). This provision seems like it could be understood to prohibit abortion providers in North Carolina from administering mifepristone and misoprostol to patients who have a very early pregnancy that is not yet visible by ultrasonography (known as a "pregnancy of unknown location").

10. I have been asked whether there is any medical justification for these provisions of the Act and whether they would affect access to and the quality of reproductive health care. In my opinion, neither the Hospitalization Requirement nor the IUP Documentation Requirement serves patient health, nor are they medically justified to ensure patient safety. In the United States, abortion is already one of the safest procedures a person may need.[2] In fact, the challenged requirements will most likely harm patient

[2] *See* Nat'l Acads. of Scis., Eng'g, & Med., *The Safety and Quality of Abortion Care in the United States*, at 58, 60, 63, 77 (2018), https://nap.nationalacademies.org/cart/download.cgi?record_id=24950 [hereinafter "Nat'l Acads."].

health by making abortion more difficult to access and, in some cases, putting it entirely out of reach.

11. If allowed to take effect, the Hospitalization Requirement and the IUP Documentation Requirement will have a detrimental impact on North Carolinians because pregnant people seeking abortions face many challenges getting the care they need, and these provisions will only make those challenges worse. People who are ultimately prevented from obtaining an abortion will be compelled to carry pregnancies to term against their wishes or seek ways to end their pregnancies without medical supervision. I am concerned about the effect these provisions of the Act will have on North Carolinians' emotional, physical, and financial wellbeing and the wellbeing of their families.

12. There is no medical reason to require that all abortions after twelve weeks of pregnancy—including abortions specifically in the cases of rape, incest, or life-limiting fetal anomaly—take place in hospitals, because these abortions can be safely performed in outpatient clinic settings. In fact, there are many reasons that non-hospital settings may be preferable.

13. There is no medical reason to require the confirmation of an intrauterine pregnancy before administering medication abortion. With the proper protocol, counseling, surveillance, and follow up, medication abortion may be safely and effectively administered to patients with pregnancies of unknown location who prefer that method of treatment.

Abortions Reasons, Methods, Safety, and Harms of Delay

14. A patient's reasons for terminating a pregnancy depend on their own personal, medical, financial, and/or family circumstances. These reasons are closely tied to each patient's values, culture and religion, health and reproductive history, family situation and support system, education or career goals, and resources and financial stability.

15. In my experience, the majority of patients seeking abortion are already parenting and, after careful consideration of the realities of their situations, decide that expanding their families at that time is not in their or their families' best interests and may be harmful to their families' well-being. Indeed, a majority of patients having abortions in the United States have already had at least one birth.[3] The strain of trying to adequately provide for their existing children is all the more apparent if one considers that approximately 75% of abortion patients nationwide are poor or low-income.[4]

16. Some people seeking abortion care feel that they are not ready to become a parent, and others are pursuing school or work opportunities. Some patients have health conditions that are complicated by pregnancy or have been diagnosed with health

[3] *See* Jenna Jerman et al., *Characteristics of U.S. Abortion Patients in 2014 and Changes Since 2008*, Guttmacher Inst., at 6–7 (May 2016), https://www.guttmacher.org/report/characteristics-us-abortion-patients-2014; *see also Induced Abortion in the United States*, Guttmacher Inst., at 1 (Sept. 2019), https://www.guttmacher.org/sites/default/files/factsheet/fb_induced_abortion.pdf; Katherine Kortsmit et al., *Abortion Surveillance—United States, 2019,* 70 Morbidity & Mortality Wkly. Rep. Surveillance Summaries 1, 6 (2021), https://www.cdc.gov/mmwr/volumes/70/ss/pdfs/ss7009a1-H.pdf ("Among the 45 areas that reported the number of previous live births for 2019, 40.2%, 24.5%, 20.0%, 9.2%, and 6.0% of women had zero, one, two, three, or four or more previous live births.").

[4] Jerman et al., *supra* note 3, at 1.

conditions that cannot be safely treated during pregnancy. These medical conditions can include hypertension, diabetes, lupus and other auto-immune diseases, kidney disease, cancer, and heart disease. I have cared for numerous patients who had abortions in order to protect their health or who have received a diagnosis of fetal anomaly (diagnoses that almost always occur after the twelfth week of pregnancy). Some patients have determined for themselves that they lack the necessary financial resources, family support, physical or mental health, or material stability to become a parent or to care for additional children. Others are in abusive relationships or are pregnant as a result of rape and are concerned that carrying to term will tether them to their abuser.[5] Each patient's decision is valid in its own right and for many of them, outpatient abortion is an appropriate choice.

17. There are two main methods of abortion: medication abortion and procedural abortion. First-trimester medication abortions most commonly involve the administration of two types of medications (mifepristone and misoprostol) to cause passage of the pregnancy tissue in a manner similar to a miscarriage.[6] First-trimester

[5] *See, e.g.*, Sarah C. M. Roberts et al., *Risk of Violence from the Man Involved in the Pregnancy After Receiving or Being Denied an Abortion*, 12 BMC Med. 1, 5 (2014) (finding that "[a]mong women seeking abortion, having an abortion was associated with a reduction over time in physical violence from the [man involved in the pregnancy], while carrying the pregnancy to term was not").

[6] "Miscarriage" is the lay term for a non-viable intrauterine pregnancy in the first trimester. In the first trimester, the terms miscarriage and "spontaneous abortion" are used interchangeably and in the second trimester, a miscarriage may also be called "intrauterine fetal demise." If the pregnant person's body does not expel the pregnancy, medical treatment may be needed to complete the miscarriage and empty the uterus, which is often referred to as miscarriage management.

medication abortion is extremely safe.[7] It requires no anesthesia or sedation; the patient simply takes the medications. Moreover, miscarriage is often treated using the same medications.

18. Procedural abortions, which are provided in both the first and second trimesters, are performed by dilating (opening) the cervix and then using gentle suction and/or instruments to empty the contents of the uterus. The two most common methods of procedural abortion are aspiration abortion and dilation and evacuation ("D&E"). Despite sometimes being referred to as "surgical abortions," these procedures are not surgical in the usual sense: they do not involve any incision into the patient's skin and in most cases can be performed with local anesthesia or moderate sedation, per patient preference, in an outpatient setting.

19. Another method of abortion is abortion by induction of labor, which is most often performed in hospitals in the second trimester as an alternative to D&E.

20. The procedures used for abortion, including when a patient is choosing abortion because the fetus has been diagnosed with a fetal anomaly, and for miscarriage management are generally the same. While miscarriage management more typically happens in hospitals or ambulatory surgical centers, usually there is no medical or scientific reason for that—it is simply that abortion care has been stigmatized and siloed, whereas miscarriage management has not. Broadly speaking, doctors are willing to provide miscarriage management, but may lack institutional support or fear threats of violence when it comes to providing abortion care. Additionally, because it is much more

[7] Nat'l Acads., *supra* note 2, at 79.

common for health insurance to cover miscarriage management as opposed to abortion, many patients do not have the same cost barriers to accessing hospital-based care in the miscarriage management context that they have in the abortion context.

21. Abortion is extremely common: nearly one in four women in the United States will have an abortion by age 45.[8] The American Medical Association ("AMA"), the largest general medical association in the country, and ACOG, the largest association of OB/GYN specialists, have issued ethical guidance that recognizes abortion's important place within health care.[9] In fact, ACOG has affirmed that access to safe, legal abortion is not only important but necessary: "Women *require* access to safe, legal abortion."[10] These organizations recognize the difficult medical decisions sometimes required in reproductive health care, balancing various forms of benefits and harms and the importance of individual autonomy.

22. Abortion is also extremely safe. Both medication and procedural abortion carry a low risk of complications and a very low risk that hospitalization is necessary to treat a complication.[11] Numerous high-quality studies exist on the incidence of

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[8] *See* Rachel K. Jones & Jenna Jerman, *Population Group Abortion Rates and Lifetime Incidence of Abortion: United States*, *2008–2014*, 107 Am. J. Pub. Health 1904, 1907 (2017).

[9] *See, e.g.*, Br. of Amici Curiae Am. Coll. of Obstetricians & Gynecologists & the Am. Med. Ass'n in Supp. Of Pls.-Appellees & in Supp. of Affirmance at 2, *Planned Parenthood of Greater Tex. Surgical Health Servs. v. Abbott*, 748 F.3d 583 (5th Cir. 2014) (No. 13-51008) ("Access to safe and legal abortion is an important aspect of women's health care.").

[10] ACOG, *Comm. Op. No. 613, Increasing Access To Abortion*, 124 Obstetrics & Gynecology 1060, 1061 (2014) (emphasis added).

[11] Ushma D. Upadhyay et al., *Incidence of Emergency Department Visits and Complications After Abortion*, 125 Obstetrics & Gynecology 175, 180 tbl. 4 (2015); *see also* Ushma D. Upadhyay et al., *Abortion-Related Emergency Department Visits in the*

complications from abortion, and those studies converge on a single conclusion: risks of complications are very low.[12] Major complications including those requiring hospitalization, surgery, or blood transfusion, occur in only 0.23% of outpatient abortions.[13] Indeed, abortion is considered one of the safest medical procedures in the United States, whether by medication, aspiration, D&E, or induction.[14]

23. As the National Academies of Science, Engineering, and Medicine have explained, "[t]he risks of medication abortion are similar in magnitude to the risks of taking commonly prescribed and over-the-counter medications such as antibiotics and NSAIDs [nonsteroidal anti-inflammatory drugs]," such as ibuprofen.[15] A 2018 report by the National Healthcare Cost and Utilization Project found the rate of hospital stays involving adverse drug reactions caused by antibiotics and similar medications, including aspirin, Tylenol, and Viagra, was 151.5 per 10,000 hospital stays, or 1.515 percent.[16] In

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United States: An Analysis of a National Emergency Department Sample, 16 BMC Med. 1, 2, 8 (2018).

[12] Nat'l Acads., *supra* note 2, at 10–11, 55–56, 60–65; *id.* at 77–78 ("[s]erious complications are rare; in the vast majority of studies, they occur in fewer than 1 percent of abortions").

[13] Upadhyay (2015), *supra* note 11, at 181; *see also* Upadhyay (2018), *supra* note 11, at 1.

[14] Nat'l Acads., *supra* note 2, at 77; *see also Frequently Asked Questions: Abortion Care*, ACOG, (Last updated Aug. 2022) https://www.acog.org/womens-health/faqs/induced-abortion ("Abortion does not increase the risk of breast cancer, depression, or infertility."); *see also Preterm Birth*, Ctrs. for Disease Control & Prevention, (Last reviewed Nov. 8, 2022) https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pretermbirth.htm (listing risk factors for preterm birth, which do not include induced abortion); Megan K. Donovan, *D&E Abortion Bans: The Implications of Banning the Most Common Second-Trimester Procedure*, 20 Guttmacher Pol'y Rev. 35, 35, (2017) (A D&E is a safe and common abortion procedure that "accounts for the majority of second-trimester abortions in the United States.").

[15] Nat'l Acads., *supra* note 2, at 79.

[16] Audrey J. Weiss et al., *Adverse Drug Events in U.S. Hospitals, 2010 Versus 2014*, Agency for Healthcare Rsch. & Quality, at 4 (2018); *see also* Advancing New Standards

contrast, according to the FDA, serious adverse events following medication abortion—including death, hospitalization, serious infection, and bleeding requiring transfusion—among mifepristone patients are "exceedingly rare, generally far below 0.1% for any individual adverse event."[17]

24. Additionally, abortion is approximately 12–14 times safer than continuing a pregnancy through to childbirth.[18] The United States has the highest maternal mortality rate among high-income countries, and in 2021 alone, 1,205 people died of pregnancy-related causes in the U.S.[19] In 2021, the maternal mortality rate increased 40 percent from the previous year,[20] making the rate in the U.S. ten times higher than the estimated rate in other high-income countries.[21] And while the maternal mortality rate in the U.S. has significantly increased, the same has not been true for abortion mortality. [22]

25. A 2015 study by Upadhyay and colleagues tracked any complications the study population experienced and confirmed that the complication rate for abortions is

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in Reprod. Health, *Analysis of Medication Abortion Risk and the FDA report, "Mifepristone U.S. Post-Marketing Adverse Events Summary through 12/31/2018,"* Univ. of Cal. S.F., (2019).

[17] Ctr. for Drug Evaluation & Rsch., *Application Number 020687Orig1s020: Medical Review(s)*, FDA, 47 (2016).

[18] Elizabeth G. Raymond & David A. Grimes, *The Comparative Safety of Legal Induced Abortion and Childbirth in the United States*, 119 Obstetrics & Gynecology 215, 216–17, 217 fig. 1 (2012); Nat'l Acads., *supra* note 2, at 37, 75 tbls. 2–4, 77–78.

[19] Selena Simmons-Duffin & Carmel Wroth, *Maternal Deaths in the U.S. Spiked in 2021, CDC Reports*, NPR (Mar. 16, 2023), https://www.npr.org/sections/health-shots/2023/03/16/1163786037/maternal-deaths-in-the-u-s-spiked-in-2021-cdc-reports#:~:text=The%20U.S.%20rate%20for%202021,deaths%20per%20100%2C000%20in%202020.

[20] Donna L. Hoyert, *Maternal Mortality Rates in the United States, 2021*, Nat'l Ctr. for Health Stats.: Health E-Stats, 1 (2023).

[21] Selena Simmons-Duffin & Carmel Wroth, *supra* note 19.

[22] Raymond & Grimes, *supra* note 18, at 215, 216–17, 217 fig. 1 (2012); Nat'l Acads., *supra* note 2, at 37, 75 tbls. 2–4, 77–78.

much lower than that for childbirth.[23] The study's authors examined billing data from a one-year period for women insured under California's Medicaid service, which covers abortion care.[24] The authors identified patients who obtained an abortion covered by California Medicaid through their policy number, including those who were treated for complications within six weeks of the abortion, either at the facility providing abortion care or an emergency department. They concluded that the rate of complication resulting from abortion was 2.11 percent, which includes both major complications (defined as necessitating hospitalization, surgery, or blood transfusion) and minor complications (all non-major adverse events) for all abortion methods in the first trimester, second trimester or later.[25] The majority of complications were minor.[26] For major complications the rate was 0.23 percent.[27] By comparison, the rate of severe complications from childbirth is 144 in 10,000, or 1.4 percent.[28] The study concluded that the abortion "complication rate is much lower than that found during childbirth and comparable to that found in the literature, even when [emergency department] visits are included and there is no loss to follow-up."[29]

26. Maternal mortality is not the only risk presented by pregnancy and birth. Every year, an estimated 50–60,000 women in the U.S. experience severe maternal

[23] Upadhyay (2015), s*upra* note 11.
[24] *Id.* at 177.
[25] *Id.* at 179.
[26] *Id.* at 181.
[27] *Id.* at 179-81.
[28] *Reproductive Health: Severe Maternal Morbidity*, CDC, https://www.cdc.gov/reproductivehealth/maternalinfanthealth/smm/rates-severe-morbidity-indicator.htm (last visited Aug. 16, 2023).
[29] Upadhyay (2015), s*upra* note 11, at 181.

morbidity,[30] or "unexpected outcomes of labor and delivery that result in significant short- or long-term consequences to a woman's health,"[31] and this rate has been on the rise over the last few decades.[32] Every pregnancy-related complication (such as hemorrhage, infection, and injury to other organs) is more common among people having live births than among those having abortions.[33]

27. Patients who carry their pregnancies to term may also face a multitude of pregnancy-related complications in the antenatal period, including gestational hypertension, gestational diabetes, infection, preeclampsia, and depression and anxiety.[34] Pregnancy-related complications are unsurprisingly more common among patients who ultimately give birth than those who have an abortion, since pregnancies ending in abortion are substantially shorter than those ending in childbirth and thus entail less time for pregnancy-related problems to occur or progress.[35]

28. Meanwhile, although the risks associated with abortion increase with gestational age, because they are very low to begin with, abortion remains a very safe

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[30] William M. Callaghan et al., *Severe Maternal Morbidity Among Delivery and Postpartum Hospitalizations in the United States*, 120 Obstetrics & Gynecology 1029, 1034 (2012).

[31] *Severe Maternal Morbidity in the United States*, CDC, https://www.cdc.gov/reproductivehealth/maternalinfanthealth/severematernalmorbidity.html (last visited Nov. 8, 2023).

[32] *Rates in Severe Morbidity Indicators per 10,000 Delivery Hospitalizations, 1993–2014*, CDC, https://www.cdc.gov/reproductivehealth/maternalinfanthealth/smm/rates-severe-morbidity-indicator.htm (last visited Aug. 16, 2023).

[33] Raymond & Grimes, *supra* note 18, at 216, 217 fig.1.

[34] *What Are Some Common Complications of Pregnancy?*, Nat'l Insts. of Health, https://www.nichd.nih.gov/health/topics/pregnancy/conditioninfo/complications (last accessed Aug. 16, 2023).

[35] Raymond & Grimes, *supra* note 18, at 216-17.

procedure even later in the second trimester.[36] The salient point from the mentioned studies is that once someone has decided to have an abortion, imposed delays are detrimental because there are increased risks with delaying the procedure and continuing the pregnancy. Abortion is a time-sensitive, essential health service. ACOG and other leading medical organizations stressed in a joint statement that "[a]bortion is an essential component of comprehensive health care" and "a time-sensitive service for which a delay of several weeks, or in some cases days, may increase the risks [to patients] or potentially make it completely inaccessible."[37]

29. Patients generally seek abortion as early in their pregnancy as they can. Nevertheless, in practice, there are many economic and logistical challenges that can cause delays. Some patients cannot afford to take multiple days off work in close proximity, as doing so will risk jeopardizing their jobs. Some patients cannot afford to arrange childcare for multiple days in close proximity without revealing to family or caregivers the reason for their need, thus compromising the confidentiality of their decision to obtain an abortion. Patients who seek abortion care after surviving rape, incest, or other violent abuse may be delayed in seeking care while they deal with associated trauma.[38]

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[36] Suzanne Zane et al., *Abortion-Related Mortality in the United States, 1998–2010*, 126 Obstetrics & Gynecology 258, 262–63 (2015); Nat'l Acads., *supra* note 2, at 10–11, 65.
[37] *Joint Statement on Abortion Access During the COVID-19 Outbreak*, ACOG (Mar. 18, 2020), https://www.acog.org/news/news-releases/2020/03/joint-statement-on-abortion-access-during-the-covid-19-outbreak.
[38] *See, e.g.*, Ushma D. Upadhyay et al., *Denial of Abortion Because of Provider Gestational Age Limits in the United States*, 104 Am. J. Pub. Health 1687, 1689, 1691 fig. 1 (2014); Diana Greene Foster et al., *Timing of Pregnancy Discovery Among Women Seeking Abortion*, 104 Contraception 642 (2021); Jenna Jerman et al., *Barriers to*

30. Moreover, delaying abortion forces a pregnant person to remain pregnant longer, experiencing the symptoms, risks, and potential complications of pregnancy. Even an uncomplicated pregnancy stresses a pregnant person's body, affects every organ system, and increasingly compresses abdominal organs as pregnancy progresses. Delay is also problematic for people for whom pregnancy worsens underlying health conditions, such as hypertension, heart failure, lung disease, or sickle cell disease.

31. For some patients, being forced to remain pregnant against their will causes psychological harm. Some patients may need to conceal the pregnancy from an abusive or controlling partner or others who would disapprove of or shame them. Additionally, delay can be very upsetting to patients ending wanted pregnancies due to fetal anomalies.

The Hospitalization Requirement Impedes Access to Abortion Without Adding to Patient Health and Safety

32. I understand that the Hospitalization Requirement mandates that an abortion provided after the twelfth week of pregnancy in cases of rape, incest, or "life-limiting anomaly" be provided in a hospital, not an outpatient abortion clinic. There is no medical reason to require that all abortions after the twelfth week of pregnancy take place in hospitals and not abortion clinics.[39] Throughout the country, legal abortions are safely and routinely performed in doctors' offices and outpatient health center

Abortion Care and Their Consequences for Patients Traveling for Services: Qualitative Findings from Two States, 49 Persps. on Sexual & Reprod. Health 95 (2017).

[39] *See* Nat'l Acads., *supra* note 2, at 10, 77 ("most abortions can be provided safely in office-based settings").

settings, including in the second trimester—in fact, only 3% of abortions are performed in hospitals in the U.S annually.[40]

33. As a highly experienced OB/GYN who has worked providing abortions at both outpatient facilities and in a hospital for 16 years, I have performed and observed abortion care in both settings. At the University of Minnesota Medical Center hospital, I perform second-trimester abortions—including aspiration, D&E, and induction—through 23.6 weeks of pregnancy.

34. When I am providing a second trimester procedural abortion in the hospital, the hospital staff first perform an intake over the phone and then schedule the patient for the next available convenient appointment, which is often two or sometimes three weeks out due to capacity constraints. There are two main physicians who provide second trimester abortions at my hospital, including myself. I provide second trimester abortions at the hospital one day per week. I have time in the operating room in the hospital one half day per week to see patients that need hospital-based abortion care, up to four patients in a typical week.

35. On the day of their procedure, the patient must check in two hours before their scheduled procedure time. Their time in the operating room is about an hour (including resident education, as I work at a teaching hospital), and their recovery time, depending on the type of sedation used, can be between 1–4 hours, making the total time in the hospital between 4–7 hours. D&E patients in a hospital must sit in the waiting

[40] Rachel K. Jones et al., *Abortion Incidence and Service Availability in the United States, 2020*, 54 Persps.. on Sexual & Reprod. Health 128, 134 tbl. 3 (2022).

room or pre-operative area potentially for hours, and alongside patients awaiting other hospital procedures or surgeries, despite the fact the abortion procedure itself typically takes no more than 15–30 minutes in most cases. At the outpatient clinics where I provide second trimester abortions, the total appointment time is much less, usually approximately 2–4 hours.

36. General anesthesia or deep sedation are not necessary for most second trimester abortion patients, and moderate or minimal sedation in addition to local anesthesia are sufficient in the majority of cases. At the outpatient clinics where I work, we recommend local anesthesia for all procedures and also offer minimal and moderate sedation options. Similar to PPSAT, we do not offer deep sedation or general anesthesia. While I always endeavor to consult with patients and honor their preferred level of sedation for a procedural abortion—particularly patients who have survived sexual violence and do not feel comfortable being fully asleep during the procedure—at the hospital, it is most often the anesthesiologist that recommends the level of sedation, and some anesthesiologists prefer general anesthesia. When general anesthesia is used, the recovery time and costs of the procedure usually increase.

37. Further, while staff at the outpatient clinics where I work receive training on how to provide judgment-free abortion care and how to interact compassionately with those who have survived sexual assaults, the same is not true for every staff member that a patient might interact with in a hospital setting. Therefore, patients who worry about the stigma and confidentiality surrounding their abortion may prefer to go to an outpatient facility where abortion care is more frequently provided.

38. Patients may have other valid and compelling reasons to seek abortion care at an outpatient clinic versus a hospital, including cost, facility proximity, total appointment time, confidentiality, staff familiarity with the procedure, sedation options, and more.

39. Regardless of whether the patient receiving an aspiration abortion or D&E is a survivor of rape or incest, or if they have received a diagnosis of a life-limiting fetal anomaly, there is no reason to categorically require either procedure to be performed in a hospital. In my experience, the only patients that are better taken care of in a hospital than an outpatient setting are those who have certain life-threatening maternal health conditions; those for whom the physician may need immediate access to blood products due to an individual patient's pre-existing medical condition in case transfusions may be needed; those who require a deeper level of sedation than would be available at an outpatient clinic; or those for whom the expertise of physicians with other subspecialty experience is critical in providing optimal care. In my experience, many times such patients will often seek a hospital abortion in the first instance because of their condition and the associated risks. But more importantly, these conditions are rare and there is no reason to require *all* patients after 12 weeks to have abortions in hospitals so that these few patients may do so. It is the role of the physician to determine if hospital-based care is required in these rare cases.

40. Furthermore, while outpatient providers in North Carolina can provide procedural abortions through the twelfth week of pregnancy under the Act, they are not allowed to perform the same procedure through the thirteenth week of pregnancy. There

is no difference in the technique or type of risks of an aspiration abortion between these two gestational durations.

41. Based on all the above, it is my opinion that there is no medical reason to require that all abortions after the twelfth week of pregnancy for rape or incest survivors or those who have received a diagnosis of life-limiting fetal anomaly take place in hospitals because these abortions can be safely performed in outpatient settings. There are many reasons that patients justifiably prefer abortions in outpatient centers like PPSAT's, including shorter appointments, lower costs, and treatment from staff and medical professionals with more experience providing abortions.

Medication Abortion is Safe and Effective in Terminating Pregnancies of Unknown Location

42. The IUP Documentation Requirement mandates that a physician providing an "abortion-inducing drug," among other things, "[d]ocument in the woman's medical chart the . . . existence of an intrauterine pregnancy." I understand that the North Carolina legislators who intervened in this case interpret this provision to prohibit abortion providers in North Carolina from administering mifepristone and misoprostol to patients whose pregnancies are not visible by ultrasonography. For low-risk patients, there is no medical reason to require ultrasound confirmation of an intrauterine pregnancy before administration of medication abortion. Therefore, there is no medical reason to deny this care to patients with pregnancy of unknown location, or to mandate that they delay their medication abortion until an intrauterine pregnancy can be documented with ultrasonography, which would expose them to increased and unnecessary medical risks.

43. General categories of pregnancy location include the following:

- a patient has a "definite intrauterine pregnancy" if the gestational sac and yolk sac and/or an embryo with or without cardiac activity are visible in the uterus;

- a patient has a "probable intrauterine pregnancy" if there is a likely gestational sac (intrauterine echogenic sac-like structure), but no yolk sac, visible in the uterus;

- a patient has a "pregnancy of unknown location" if there is no intrauterine or extrauterine pregnancy visible on transvaginal ultrasonography, but the patient has a positive pregnancy test;

- a patient has a "probable ectopic pregnancy" if there is an inhomogeneous adnexal mass or extrauterine sac-like structure;

- a patient has an "ectopic pregnancy" if an extrauterine gestational sac with yolk sac and/or embryo with or without cardiac activity is visualized.[41]

When we speak about "pregnancies of unknown location," we are talking about the category where neither an intrauterine nor an extrauterine pregnancy is visible on transvaginal ultrasonography and the patient has a positive pregnancy test. Generally, an intrauterine pregnancy is not visible via ultrasound images until 5–6 weeks of pregnancy, as measured from the first day of the patient's last menstrual period.

44. The ability to provide abortion care to patients with a pregnancy of unknown location as quickly as possible offers important benefits to those patients, including those who prefer medication abortion. In my experience, and as is also documented in research studies, most people who choose a medication abortion have a strong preference for this method.[42] Medication abortion, in contrast to aspiration

[41] *See generally* Kurt Barnhart et al., *Pregnancy of Unknown Location: A Consensus Statement of Nomenclature, Definitions, and Outcome*, 95 Fertility & Sterility 3 (2011).
[42] Daniel Grossman et al., *Effectiveness and Acceptability of Medical Abortion Provided Through Telemedicine*, 118 Obstetrics & Gynecology 296, 300 (2011).

abortion, allows the patient to complete the abortion at home or in another safe and private location. It is also less invasive than procedural abortion, and therefore may be preferable for many patients, including those who are sexual assault survivors.

45. Administration of medication abortion for patients with pregnancies of unknown location, combined with simultaneous screening for ectopic pregnancies, has been shown to be both safe and effective. I recently co-authored a study of pregnancy outcomes for patients presenting for abortion at Planned Parenthood in St. Paul, Minnesota, between July 1, 2016, and December 31, 2019, who were diagnosed with a pregnancy of unknown location (the "St. Paul Study"). The St. Paul Study examined the outcomes from a protocol for providing medication abortion for patients with a pregnancy of unknown location who were at low risk for ectopic pregnancy and who had chosen that method of abortion. Our study found that this protocol—immediate medication abortion treatment with simultaneous serial testing of the pregnancy hormone human chorionic gonadotropin ("hCG") to further exclude ectopic pregnancy—was safe and effective.[43] No evidence suggests medication abortion worsens an ectopic pregnancy, but medication abortion does not treat it, which is why simultaneous screening for ectopic pregnancy is an important piece of the protocol.

46. Based on our research, we concluded that the option of proceeding with a medication abortion before the pregnancy location had been diagnosed with

[43] Borchert et al., *supra* note 1 at 6; *see also* Alisa B. Goldberg et al., *Mifepristone and Misoprostol for Undesired Pregnancy of Unknown Location*, 139 Obstetrics & Gynecology 771, 780 (2022).

ultrasonography has the potential to help improve access to care and patient satisfaction and does not delay the diagnosis of ectopic pregnancy.

47. In addition to the St. Paul Study, another peer-reviewed study, which also demonstrated the safety and efficacy of medication abortion for patients with a pregnancy of unknown location, showed that this protocol leads to earlier exclusion of ectopic pregnancy than waiting to see whether an intrauterine pregnancy can be diagnosed.[44]

48. I understand that PPSAT and Dr. Gray use the same evidence-based protocol for administering medication abortion to patients with pregnancies of unknown location as the one used in the St. Paul Study. At a high level, this protocol involves screening for ectopic pregnancy and referring high-ectopic-risk patients for appropriate treatment; counseling low-ectopic-risk patients on their options (medication abortion, aspiration abortion, or returning at a later date to see if an intrauterine pregnancy can be seen on an ultrasound at that time); performing serial blood testing to test whether the hCG level rises or falls over time; and conducting appropriate surveillance and follow-up to ensure the pregnancy was terminated and any complications are identified and treated (the "Protocol"). This Protocol is substantially identical to the protocol that I use both in outpatient clinics and the hospital.

49. If an outpatient clinic were to refer a patient with a pregnancy of unknown location to a hospital for ectopic evaluation instead of administering a medication abortion according to this Protocol, based on my experience the hospital would likely perform the same serial hCG testing that the outpatient clinic could have performed while

[44] Goldberg et al., *supra* note 43 at 778.

simultaneously administering the medication abortion (assuming the hospital does not itself offer the patient the option of medication abortion plus serial hCG testing according to the Protocol). Therefore, such a referral would not increase patient safety and would only serve to delay abortion care.

50. It is important to note that the Protocol (both in my research and as employed by PPSAT and Dr. Gray) would only be used to treat patients who have already been determined to be at a low risk for ectopic pregnancy. Ectopic pregnancies continue to be a significant cause of pregnancy-related morbidity and mortality because, if left untreated, they can rupture and cause serious internal bleeding. For this reason, clinicians at both hospitals and outpatient health centers routinely provide detailed counseling and conduct a symptom assessment to identify patients at risk for ectopic pregnancies, including by considering known risk factors, symptoms, and prior and current health history—all of which can be assessed by a conversation with the patient.[45] For example, when I conduct this type of ectopic screening, I ask patients about their last menstrual cycle (date, timing, regularity, amount of bleeding and cramping); whether they have had a prior ectopic pregnancy or treatment and/or hospitalization for pelvic inflammatory disease or prior tubal sterilization; whether they were using hormonal birth control, an intrauterine device or oral emergency contraception when they became pregnant; whether

[45] *See, e.g.*, Abigail R. Aiken et al., *Effectiveness, Safety and Acceptability of No-Test Medical Abortion (Termination of Pregnancy) Provided via Telemedicine: A National Cohort Study*, 128 BJOG: Int'l J. Obstetrics & Gynaecology 1464, 1466 (2021) (explaining that patients "were offered a consultation via phone or video call, during which an assessment of eligibility for treatment via telemedicine was made," which included assessing whether "they had a low risk of ectopic pregnancy"); *see also* Upadhyay et al. (2022), *supra* note 1.

they have had a pregnancy recently and the outcome of that pregnancy; and whether they are experiencing any symptoms such as abdominal or pelvic pain and bleeding that was not typical for a menstrual cycle. I do not rely on one single piece of information to make my assessment.

51. In fact, research demonstrates that screening for medication abortion eligibility without categorically requiring ultrasonography is safe for many patients. I co-authored a research study which showed that screening for medication abortion eligibility based on a patient's medical history can be as safe as screening protocols that utilize an ultrasound or pelvic exam.[46] Another recent study examining patients screened for ectopic pregnancy via phone or video call, who went on to have medication abortions without prior ultrasound, found no statistically significant difference in the rate of ectopic pregnancy between the group of patients that had ultrasound and the group that did not, further demonstrating the safety and efficacy of using ectopic screening methods other than ultrasound for patients planning medication abortion.[47]

52. Based on all the above, it is my opinion that there is no medical reason to require the confirmation of an intrauterine pregnancy before administering medication abortion. With the proper protocol, counseling, surveillance, and follow-up, medication abortion may be safely and effectively administered to low-ectopic-risk patients with pregnancies of unknown location who prefer that method of treatment. Sending a patient

[46] Upadhyay et al. (2022), *supra* note 1 at 488; Anger et al., *supra* note 1 at 663–64.
[47] Aiken et al., *supra* note 45, at 1469 (finding that "[t]he overall incidence of ectopic pregnancy was equivalent in both cohorts — 39 (0.2%) in the traditional cohort and 49 (0.2%) in the telemedicine-hybrid cohort").

away solely because they have a pregnancy of unknown location does not serve the patient and only serves to unnecessarily delay care and impede abortion access.

* * *

53. In sum, the Hospitalization Requirement and IUP Documentation Requirement do not improve patient safety. They single out abortion—an extremely safe and common procedure—for burdensome treatment and, rather than helping patients, impede their access to care.

I declare under penalty of perjury that the foregoing is true and correct.

Dated: March 1, 2024

Signed: 

Christy M. Boraas Alsleben, M.D., M.P.H.

EXHIBIT 1

CURRICULUM VITAE FOR PROMOTION AND TENURE

CHRISTY M. BORAAS, M.D., M.P.H
United States

PROFESSIONAL ADDRESS

Address M Health Fairview Women's Clinic
606 24th Avenue South, Suite 300
Minneapolis, MN 55454
Telephone [redacted]
FAX [redacted]
Email [redacted]

Address Planned Parenthood North Central States
671 Vandalia Street
St. Paul, MN 55114
1200 Lagoon Avenue
Minneapolis, MN 55408
Telephone [redacted]
FAX [redacted]
Email [redacted]

IDENTIFYING INFORMATION

Education

Degree	**Institution**	**Date Degree Granted**
B.A.	St. Olaf College, Northfield, MN *Biology and English, magna cum laude*	2001
	University of Pittsburgh, Pittsburgh, PA *Semester at Sea Study Abroad Program*	Fall 2000
M.P.H.	University of Minnesota School of Public Health, Minneapolis, MN *Epidemiology*	2004
M.D.	University of Minnesota Medical School, Minneapolis, MN *With Honors*	2008
Residency in Obstetrics and Gynecology	The Ohio State University Medical Center, Columbus, OH	07/2008-06/2012
Fellowship in Family Planning	Magee-Womens Hospital, University of Pittsburgh, Pittsburgh, PA	07/2012-07/2014
Certificate in Clinical Research	Institute for Clinical Research Education, University of Pittsburgh, Pittsburgh, PA	07/2012-07/2014

Fellowship in Reproductive Health Advocacy	Leadership Training Academy, Physicians for Reproductive Health, New York, NY	07/2013-06/2014

Certifications

Fellow, American Board of Obstetrics and Gynecology (#9028922) 2017-present

Licenses

Medical Physician and Surgeon, Minnesota (#58304) 2014-present

Medical Physician and Surgeon, Pennsylvania (#MD445822) 2012-2014

Academic Appointments

University of Minnesota Minnesota Population Center
Faculty Member 2019-present

University of Minnesota Medical School, Twin Cities (2016-2022)
Center for Global Health and Social Responsibility
Associate Global Health Faculty 2016-present

University of Minnesota Medical School, Twin Cities (2015-2022)
Department of Obstetrics, Gynecology and Women's Health
Assistant Professor 2015-present

Department of Obstetrics, Gynecology and Reproductive Sciences
University of Pittsburgh School of Medicine, Pittsburgh, PA
Clinical Instructor 2012-2014

University of Pittsburgh School of Medicine, Pittsburgh, PA
Center for Family Planning Research
Investigator 2012-2014

Academic Administrative Appointments

University of Minnesota Medical School, Twin Cities
Ryan Residency Training Program in Abortion and Family Planning
Director 2015-present

University of Minnesota Medical School, Twin Cities
Fellowship in Family Planning (ACGME approval pending)
Director 2015-present

Planned Parenthood Minnesota, South Dakota, North Dakota, St. Paul, MN
Director of Obstetrics and Gynecology Resident Education 2014-present

The Ohio State University, Columbus, OH
Department of Obstetrics and Gynecology
Chief Administrative Resident 2011-2012

Clinical/Hospital Appointments

M Health Fairview Women's Clinic, Minneapolis, MN
Staff Physician 2015-present

University of Minnesota Medical Center, Minneapolis, MN
Staff Physician 2014-present

Planned Parenthood Minnesota, South Dakota, North Dakota, St. Paul, MN
Associate Medical Director 2014-present
Director of Research 2014-present

Whole Woman's Health Twin Cities, Minneapolis, MN
Staff Physician 2014-present

Planned Parenthood of Western Pennsylvania, Pittsburgh, PA
Staff Physician 2012-2014

Consulting Positions

ViiV Healthcare 2022-present

American College of Obstetricians and Gynecologists, Optimizing Care for Pregnancy Loss (OCPL) Program Trainer 2021-present

American College of Obstetricians and Gynecologists, Implementing Progress in Abortion Care and Training (IMPACT) Trainer 2021-present

University of Global Health Equity, Rwanda 2020-present

American College of Obstetricians and Gynecologists, Immediate Postpartum Long-Acting Reversible Contraception Trainer 2018-present

Minnesota Department of Health 2017-present

Basic Health International 2014-present

American Refugee Committee International 2013-present

Current Membership and Offices in Professional Organizations

Member, Consortium of Abortion Providers Abortion Equity Cohort 2021-2023

Member, Education Committee, Fellowship in Complex Family Planning 2020-present

Minnesota Public Health Association (MPHA)
Member 2018-present
Member, MPHA Global Health Committee 2018-present

Society of Family Planning (SFP) (2015-2022)
Member, Finance Committee 2021-present

Member, Research Implementation Special Interest Group	2021-present
Junior Fellow	2012-present
Member, Program Committee	2019-2020
Member, Annual Meeting Session Working Group	2019
Member, Audit Committee	2015-2018
Minnesota Medical Association (MMA) (2014-2022)	
Chair, Abortion Policy Work Group	2021-2023
Member, Policy Council	2017-2023
Member	2014-present
Member, Medical Practice and Quality Committee	2014-2018
Minnesota section of ACOG (MN ACOG) (2014-2022)	
Member, Annual Meeting Planning Committee	2021-present
Member, Advisory Council	2019-present
Member	2014-present
Member, Legislative Committee	2014-present
Member, Association of Professionals of Gynecology and Obstetrics (APGO)	2014-present
Member, Physicians for Reproductive Health	2010-present
American Congress of Obstetricians and Gynecologists (ACOG) (2008-2022)	
Fellow	2017-present
Junior Fellow	2008-2017
Member, Academy of Breastfeeding Medicine	2013-2016
Member, Association of Reproductive Health Professionals	2009-2016

Visiting Professorships or Visiting Scholar Positions

American Refugee Committee International	
Ban Don Yan Refugee Camp, Sangkhlaburi, Thailand	
Family Planning Specialist	2013
Kilimanjaro Christian Medical Center, Moshi, Tanzania	
Clinical Instructor in Obstetrics and Gynecology	2011
Pro-Link Organization, Accra, Ghana	
Reproductive Health Epidemiologist	2003

HONORS AND AWARDS FOR RESEARCH, TEACHING, PUBLIC ENGAGEMENT AND SERVICE

University of Minnesota

Gold Humanism Honor Society	2007-2008
Medical School Basic Science Overall Top Honors (Top 20%)	2006
Student Research Grant, Minnesota Medical Foundation	2005

Walter H. Judd Fellowship in Global Health	2003, 2007

External Sources

UMP Clinical Excellence Award	2022, 2023, 2024
Top Doctor, Minnesota Monthly Magazine	2018, 2021, 2022, 2023
Rising Star, Mpls St. Paul Magazine	2021
David E. Rogers Fellowship	2005
Phi Beta Kappa	2001
St. Olaf College Biological Honor Society	2001
Semester at Sea Dean's List	2000

RESEARCH AND SCHOLARSHIP

Grants and Contracts

External Sources

Current

1. Role: Co-Investigator
   Principal Investigator: David Turok, MD
   External Agency: University of Utah
   Grant Title: LNG 52 mg IUD for Emergency Contraception and Same-Day Start
   Project Dates: 06/01/2022-5/30/2024
   Total costs: $24,505
   Direct costs/year: $19,505
   Funded salary support: 1%

2. Role: Co-Investigator
   Principal Investigator: Alison Ojanen-Goldsmith
   External Agency: Male Contraceptive Initiative
   Grant Title: Acceptability, preferences, and values related to contraception for people who produce sperm
   Project Dates: 12/01/20-11/30/22
   Total costs: $150,000
   Direct costs/year: $71,442.50
   Funded salary support: 1%

Pending

1. Role: Site Principal Investigator
   External Agency: Gynuity Health Projects
   Grant Title: Extending outpatient medical abortion in the late first trimester of pregnancy
   Submitted: September 2020
   Project Dates: 10/01/22-TBD
   Total costs: TBD
   Direct costs/year: TBD
   Funded salary support: 1%

Completed

1. Role: Co-Investigator
   PI: Sharon Allen, MD, PhD
   Grant Number: 5R01DA047287
   External Agency: National Institutes of Health
   Grant Title: Bupropion for the Prevention of Postpartum Smoking Relapse
   Project Dates: 09/01/18-08/30/23
   Total costs: $2,372,039
   Direct costs/year: $440,350
   % Effort/salary support: 5%

2. Role: Site Principal Investigator
   External Agency: Gynuity Health Projects
   Grant Title: Medication Abortion with Autonomous Self-Assessment
   Submitted: November 2021
   Project Dates: 03/01/2022-02/28/2023
   Total costs: $34,345.84
   Direct costs/year: $25,759.38
   Funded salary support: 1%

3. Role: Site Principal Investigator
   External Agency: Mayo Clinic
   Grant Title: Validation study of self-collected rectal and pharyngeal swabs for Chlamydia and Gonorrhea testing
   Project Dates: 10/01/21 - 10/01/22
   Direct costs/year: $34,793.94
   Funded salary support: 1%

4. Role: Site Principal Investigator
   External Agency: University of Pennsylvania
   Grant Title: Development of an implementation strategy to integrate HIV pre-exposure prophylaxis into family planning care
   Project Dates: 11/01/21 - 11/01/22
   Total costs: not applicable
   Direct costs/year: not applicable
   Funded salary support: 1%

5. Role: Site Principal Investigator
   Principal Investigator: Elizabeth Raymond, MD
   External Agency: Gynuity Health Projects
   Grant Title: Feasibility of Medical Abortion by Direct-to-Consumer Telemedicine.
   Project Dates: 09/01/19-11/01/21
   Total costs: $85,000
   Direct costs/year: $63,750
   Funded salary support: 1%

6. Role: Co-Investigator

PI: Rebecca Shlafer, PhD
Grant Number: 5R03HD093961
External Agency: National Institutes of Health
Grant Title: Efficacy and Cost-Effectiveness of Doula Care for Incarcerated Pregnant Women
Project Dates: 07/01/17 - 06/30/20
Total cost: $154,000
Direct costs/year: $50,000
Funded salary support: 10%

7. Role: Co-investigator
   Principal Investigator: Vivian Bardwell, PhD
   Grant Number: 5R01HD084459
   External Agency: National Institutes of Health
   Grant Title: Control of Trophoblast Differentiation in Placental Development
   Project Dates: 03/01/16-01/01/18
   Total costs: $1,424,260
   Direct costs/year: $215,463
   Funded salary support: 0%

8. Role: Site Principal Investigator
   Principal Investigator: Ilana Dzuba, MHSc
   External Agency: Gynuity Health Projects
   Grant Title: Non-surgical alternatives to treatment of failed medical abortion: A randomized controlled double-blind trial.
   Project Dates: 03/01/17-01/31/18
   Total costs: $24,000
   Direct costs/year: $18,000
   Funded salary support: 1%

9. Role: Principal Investigator
   External Agency: William and Flora Hewlett Foundation
   Grant Title: Quantifying contraceptive failure with unprotected intercourse 6-14 days prior to contraceptive initiation.
   Project Dates: 11/01/16-08/30/18
   Total costs: $63,000
   Direct costs/year: $50,400
   Funded salary support: 10%

10. Role: Site Principal Investigator
    External Agency: Gynuity Health Projects
    Grant Title: Simplified Medical Abortion Screening: A Pilot Demonstration Project
    Project Dates: 08/01/16-01/31/17
    Total: $24,000
    Direct costs/year: $19,200
    Funded salary support: 1%

11. Role: Principal Investigator
    External Agency: Society of Family Planning Research Fund

Grant Title: Quick start levonorgestrel intrauterine contraceptive initiation in the setting of unprotected intercourse: a pilot study.
Project Dates: 02/01/14-12/31/15
Total costs: $30,000
Direct costs/year: $24,000
Funded salary support: 5%

12. Role: Principal Investigator
External Agency: Society of Family Planning Research Fund
Grant Title: Dilapan-S with Adjunctive Misoprostol for Same-day Second Trimester Dilation and Evacuation: A Randomized, Double-Blind, Placebo-Controlled Trial
Project Dates: 06/01/13-07/31/14
Total costs: $70,000
Direct costs/year: $56,000
Funded salary support: 10%

Business and Industry (Clinical) Trials

Current

1. Role: Site Principal Investigator
External Agency: Quidel Ortho Corporation
Title: Savanna HVT Validation Study
Submitted: May 2023
Project Dates: 11/01/2023-10/31/2024
Total cost: $198,373.50
Direct costs/year: $61,200
Funded salary support: 1%

2. Role: Site Principal Investigator
External Agency: BD
Title: IDS-QSCTGCClinical Study Clinical Validation of the BD Elience™ POC CT/GC Assay
Submitted: March 2023
Project Dates: 11/01/23-05/01/24
Total cost: $282,717.50
Direct costs/year: $241,540.00
Funded salary support: 1%

3. Role: Site Principal Investigator
External Agency: Visby Medical
Title: Clinical Evaluation of Visby Medical Personal PCR Women's Sexual Health Test for the Detection of Chlamydia trachomatis (CT), Neisseria gonorrhoeae (NG), and Trichomonas vaginalis (TV) Using Self-Collected Vaginal Swabs.
Submitted: Jan 2023
Project Dates: 03/01/23-03/01/24
Direct costs/year: $124,500
Funded salary support: 1%

4. Role: Site Principal Investigator
External Agency: Mylan Technologies Inc., A Viatris Company

Title: A Phase 3, Multicenter, Open-Label, Single Arm Study of MR-100A-01 in Women of Childbearing Potential to Evaluate Contraceptive Efficacy and Safety
Submitted: May 2023
Project Dates: 08/15/2023-01/01/25
Total cost: $228,750
Direct costs/year: $214,440
Funded salary support: 1%

5. Role: Site Principal Investigator
External Agency: Sebela, Inc.
Title: A Phase 3, Prospective, Multi-Center, Single-Arm, Open-Label Study to Evaluate VeraCept®, a Long-Acting Reversible Intrauterine Contraceptive for Contraceptive Efficacy, Safety, and Tolerability.
Submitted: March 2017
Project Dates: 10/01/18-06/01/24
Total cost: $1,165,751
Direct costs/year: $124,901.89
Funded salary support: 1%

6. Role: Site Principal Investigator
External Agency: Merck, Inc.
Title: A Phase 3, Open-Label, Multi-Center, Single Arm Study to Assess Contraceptive Efficacy and Safety of the Etonogestrel (MK-8415) Implant during Extended Use Beyond 36 months from Insertion in Premenopausal Females up to 35 years of age.
Submitted: June 2020
Project Dates: 12/01/20-11/30/22
Total costs: $761,364
Direct costs/year: $266,477.40
Funded salary support: 1%

Pending

1. Role: Site Principal Investigator
External Agency: PRA Health Sciences, Inc.
Title: A Phase 3, Prospective, Multi-Center, Single-Arm, Open-Label Study to Evaluate LevoCept™, a Long-Acting Reversible Intrauterine System (IUS) for Contraceptive Efficacy, Safety, and Tolerability.
Submitted: May 2020
Project Dates: 01/01/22-12/31/29
Total Costs: TBD
Direct costs/year: TBD
Funded salary support: TBD

Completed

1. Role: Site Principal Investigator
External Agency: Roche Molecular Systems, Inc.
Title: Prospective Women's Health Sample Collection_RMS_BAM
Submitted: Feb 2023
Project Dates: 01/01/23-10/31/23

Direct costs/year: $96,817
Funded salary support: 1%

2. Role: Site Principal Investigator
External Agency: Roche Molecular Systems, Inc.
Title: cobas® CT/NG/MG Nucleic acid test for use on the cobas® Liat® System: Clinical Performance Evaluation
Submitted: Nov 2022
Project Dates: 01/01/23-09/30/23
Direct costs/year: $229,687
Funded salary support: 1%

3. Role: Site Principal Investigator
External Agency: Cepheid
Title: 248C3: Clinical Evaluation of the Xpert Xpress CT/NG Test in Female Extragenital Specimens
Submitted: July 2022
Project Dates: 10/01/22-04/30/2023
Total costs: $149,349.50
Direct costs/year: $104,544.65
Funded salary support: 1%

4. Role: Site Principal Investigator
External Agency: Beckman Coulter, Inc.
Title: Access HBV Serological Markers Subject Enrollment US Protocol, Access HCV AB Assay Subject Enrollment US Protocol, Access HIV AG/AB Combo Assay US Enrollment Protocol
Submitted: October 2021
Project Dates: 11/01/21-11/01/22
Total Costs: $828,281.25
Direct costs/year: $621,210.94
Funded salary support: 1%

5. Role: Site Principal Investigator
External Agency: EvoFem Biosciences
Title: Phase 3 double-blind placebo-controlled efficacy trial of EVO100 vaginal gel for the prevention of urogenital Chlamydia trachomatis and Neisseria gonorrhea infection
Submitted: July 2020
Project Dates: 10/21/20-10/21/22
Total costs: $279,977.50
Direct costs/year: $193,692.50
Funded salary support: 1%

6. Role: Site Principal Investigator
External Agency: Abbott Molecular, Inc.
Title: Alinity m HR HPV Specimen Collection Study from Women Referred to Colposcopy
Submitted: May 2021
Project Dates: 05/01/21-05/01/22
Total costs: $240,000
Direct costs/year: $168,000

Funded salary support: 1%

7. Role: Site Principal Investigator
   External Agency: Cepheid
   Title: Clinical Evaluation of the Xpert Xpress CT/NG Test in Female Urogenital Specimens
   Submitted: April 2020
   Project Dates: 04/28/20-4/28/21
   Direct costs/year: $50,000
   Funded salary support: 1%

8. Role: Site Principal Investigator
   External Agency: Cepheid
   Title: Pre-Clinical Evaluation of the Xpert Xpress CT/NG Test
   Submitted: April 2019
   Project Dates: 07/08/19-10/30/19
   Direct costs/year: $28,475
   Funded salary support: 1%

9. Role: Site Principal Investigator
   External Agency: Visby Medical (Click Dx)
   Title: Clinical Evaluation of the Click Sexual Health Test for the Detection of Neisseria gonorrhoeae, Trichomonas vaginalis, and Chlamydia trachomatis in Women.
   Submitted: July 2019
   Project Dates: 09/19/19-12/30/19
   Direct costs/year: $28,650
   Funded salary support: 1%

10. Role: Site Principal Investigator
    External Agency: Abbott (Alere) San Diego
    Title: Alere hCG Test Method Comparison Study.
    Submitted: February 2019
    Project Dates: 03/15/19-07/30/19
    Direct costs/year: $55,050
    Funded salary support: 5%

11. Role: Site Principal Investigator
    External Agency: HRA Pharma
    Title: Multi-Center Study to Test the Comprehension of the Ovrette® OTC Drug Facts Label
    Project Dates: 10/01/16-01/31/17
    Direct costs/year: $8,450
    Funded salary support: 1%

12. Role: Site Principal Investigator
    External Agency: Hologic, Inc.
    Title: Prospective Collection and Testing of Lesion Specimens for the Development of a Herpes Simplex Virus Assay.
    Project Dates: 10/01/14-07/31/16
    Direct costs/year: $30,300

Funded salary support: 1%

University of Minnesota Sources

Current

1. Role: Co-Principal Investigator
   Principal Investigator: Karen Borchert, MD
   Internal Agency: University of Minnesota Medical School, Department of Family Medicine
   Title: Pregnancy of Unknown Location in Abortion Care: Management and Outcomes.
   Project Dates: 01/01/17-12/31/22
   Direct costs/year: non-applicable

Completed

1. Role: Principal Investigator
   Internal Agency: University of Minnesota Medical School, Department of Obstetrics, Gynecology and Women's Health Progressive Grant, Phase II
   Title: Identifying predictors of post-abortion contraceptive uptake using a comprehensive, multisite database
   Project Dates: 07/01/20-06/30/22
   Direct Costs/Year: $20,000
   Funded salary support: 0%

2. Role: Principal Investigator
   Internal Agency: University of Minnesota Medical School, Department of Obstetrics, Gynecology and Women's Health Research Support Grant
   Title: Quantifying contraceptive failure with unprotected intercourse 6-14 days prior to contraceptive initiation
   Project Dates:01/01/17-6/30/21
   Total Cost: $3,500
   Funded salary support: 0%

3. Role: Principal Investigator
   Internal Agency: University of Minnesota Medical School, Department of Obstetrics, Gynecology and Women's Health Research Support Grant
   Title: Contrasperm: the Future of Male Birth Control
   Project Dates: 08/01/19-07/31/20
   Total Cost: $4,500
   Funded salary support: 0%

4. Role: Principal Investigator
   Internal Agency: University of Minnesota Medical School, Department of Obstetrics, Gynecology and Women's Health Progressive Grant, Phase I
   Title: Identifying predictors of post-abortion contraceptive uptake using a comprehensive, multisite database
   Project Dates: 08/01/19-07/31/20
   Total cost: $10,000
   Funded salary support: 0%

Publications

Impact Analytics

h-Index	*h(fl)*-Index	Total Publications	First/Last Author Publications	Total Citations	First/Last Author Citations
8	**2**	**18**	**6**	**231**	**18**

Publication #1-2 not yet in Manifold

Peer-Reviewed Publications

1. Wise MK, Okuyemi O, Flint M, Biscaye EM, Tessier KM, Traxler SA, **Boraas CM**. Intrauterine Device Placement Success for Adolescents and Young Adults at Community-based Reproductive Health Clinics. J Pediatr Adolesc Gynecol. 2023 Dec 8:S1083-3188(23)00451-5. doi: 10.1016/j.jpac.2023.11.013. Online ahead of print.
   Impact Factor: 2.298; Times Cited: 0; Role: Developed study concept and design, defined intellectual content, conducted literature search, data acquisition, manuscript preparation, editing and review.

2. Raymond EG, Frye LJ, Tocce K, Gingras S, Almquist A, Firstenberg A, Ortega C, Blumenthal PD, Winikoff B, **Boraas C.** Evaluation of a "smart" screening tool for asynchronous assessment of medication abortion eligibility: A pilot study. Contraception. 2023 Nov 20:110340. doi: 10.1016/j.contraception.2023.110340. Online ahead of print.
   Impact Factor: 2.335; Times Cited: 0; Role: Developed study concept and design, defined intellectual content, conducted literature search, data acquisition, manuscript preparation, editing and review.

3. Hassan A, Ojanen-Goldsmith A, Hing A, Mahoney M, Traxler SA, **Boraas CM**. More than tears: associations between exposure to chemical agents used by law enforcement and adverse reproductive health outcomes. Front. Epidemiol. Sec. Occupational and Environmental Epidemiology. 2023 Aug 23:3 - 2023. https://doi.org/10.3389/fepid.2023.1177874 https://www.frontiersin.org/articles/10.3389/fepid.2023.1177874/full
   Impact Factor: n/a; Times Cited: 0; Role: Developed study concept and design, defined intellectual content, conducted literature search, data acquisition, manuscript preparation, editing and review.

4. Martins SL, **Boraas CM.** Willingness to use novel reversible methods of male birth control: a community-based survey of cisgender men in the United States. Contracept Reprod Med. 2023 Aug 10;8(1):41. doi: 10.1186/s40834-023-00242-y.
   Impact Factor: 2.9; Times Cited: 0; Role: Developed study concept and design, defined intellectual content, conducted literature search, data acquisition, manuscript preparation, editing and review.

5. Borchert K, Thibodeau C, Varin P, Wipf H, Traxler S, **Boraas CM.** Medication Abortion and Uterine Aspiration for Undesired Pregnancy of Unknown Location: A Retrospective Cohort Study. Contraception. 2023 Jun;122:109980. doi:10.1016/j.contraception.2023.109980.
   Impact Factor: 2.335; Times Cited: 0; Role: Developed study concept and design, defined intellectual content, conducted literature search, data acquisition, manuscript preparation, editing and review.

6. Koenig LR, Raymond EG, Gold M, **Boraas CM**, Kaneshiro B, Winikoff B, Coplon L, Upadhyay UD. Mailing abortion Pills does not delay care: a cohort study comparing mailed to in-person dispensing of abortion medications in the United States. Contraception. 2023 Jun;122:109962. doi: 10.1016/j.contraception.2023.109962.
Impact Factor: 2.335; Times Cited: 0; Role: Protocol editing, site administration of multicenter trial, data acquisition, manuscript preparation, editing and review.

7. Groene EA*, **Boraas CM**, Smith MK, Lofgren SM, Rothenberger MK, Enns EA. Evaluation of Strategies to Improve Uptake of Expedited Partner Therapy for *Chlamydia trachomatis* Treatment in Minnesota: A Decision Analytic Model. MDM Policy Pract. 2023 Jan 22;8(1):23814683221150446. doi: 10.1177/23814683221150446. eCollection 2023 Jan-Jun.
Impact Factor: 1.54; Times Cited: 0; Role: Developed study concept and design, defined intellectual content, conducted data acquisition, manuscript preparation, editing and review.

8. Groene EA*, **Boraas CM**, Smith MK, Lofgren SM, Rothenberger MK, Enns EA. A statewide mixed-methods study of provider knowledge and behavior administering Expedited Partner Therapy for chlamydia and gonorrhea. Sex Transm Dis. 2022 Jul 3. doi: 10.1097/OLQ.0000000000001668.
Impact factor: 3.686; *Times Cited: 0; Role: Protocol creation, manuscript preparation, editing and review.*

9. Ralph JA, Westberg SM, **Boraas CM**, Terrell CA, Fischer JR. PrEP-aring the General Gynecologist to Offer HIV Pre-exposure Prophylaxis. Clin Obstet Gynecol. 2022 Jun 16. doi: 10.1097/GRF.0000000000000713. Online ahead of print.
Impact factor: 1.619; Times Cited: 0; Role: manuscript preparation, editing and review.

10. Henke L*, Martins S*, **Boraas CM**. Associations Between Income Status and Perceived Barriers to Using Long-Acting Reversible Contraception: An Exploratory Study. Front Reprod Health, 12 April 2022. https://doi.org/10.3389/frph.2022.856866
Impact factor: NA; Times Cited: 0: Role: Protocol creation, data acquisition, manuscript preparation, editing and review.

11. Upadhyay UD, Raymond EG, Koenig LR, Coplon L, Gold M, Kaneshiro B, **Boraas CM**, Winikoff B. Outcomes and Safety of History-Based Screening for Medication Abortion: A Retrospective Multicenter Cohort Study. JAMA Intern Med. 2022 Mar 21. Online ahead of print.
impact factor: 44.41; Times Cited: 26; Role: Protocol editing, site administration of multicenter trial, data acquisition, manuscript preparation, editing and review.

12. Anger HA, Raymond EG, Grant M, Haskell S, **Boraas C**, Tocee K, Banks J, Coplon L, Shochet T, Platais I, Winikoff B. Clinical and service delivery implications of omitting ultrasound before medication provided abortion via direct-to-patient telemedicine and mail. Contraception. 2021 Dec;104(6):659-665. doi: 10.1016/j.contraception.2021.07.108. Epub 2021 Jul 28.
Journal Impact Factor: 2.335; Times Cited: 8; Role: Protocol editing, site administration of multicenter trial, data acquisition, manuscript preparation, editing and review.

13. Chong E, Shochet T, Raymond E, Platais I, Anger HA, Raidoo S, Soon R, Grant MS, Haskell S, Tocce K, Baldwin MK, **Boraas CM**, Bednarek PH, Banks J, Coplon L, Thompson F, Priegue E,

Winikoff B. Expansion of a direct-to-patient telemedicine abortion service in the United States and experience during the COVID-19 pandemic. Contraception. 2021 Jul;104(1):43-48. doi: 10.1016/j.contraception.2021.03.019. Epub 2021 Mar 27.
Journal Impact Factor: 2.335; Times Cited: 50; Role: Protocol review and editing, site administration of multicenter trial, data acquisition, manuscript preparation, editing and review.

14. **Boraas CM**, Sanders JN, Schwarz EB, Thompson I, Turok DK. Risk of Pregnancy With Levonorgestrel-Releasing Intrauterine System Placement 6-14 Days After Unprotected Sexual Intercourse. Obstet Gynecol. 2021 Apr 1;137(4):623-625.
Journal Impact Factor: 4.982; Times Cited: 0; Role: Protocol review and editing, grant writing and submission, site administration of multicenter trial, data acquisition, manuscript preparation, editing and review.

15. Raymond EG, Anger HA, Chong E, Haskell S, Grant M, **Boraas C**, Tocce K, Banks J, Kaneshiro B, Baldwin MK, Coplon L, Bednarek P, Shochet T, Platais I. "False positive" urine pregnancy test reults after successful medication abortion. Contraception. 2021 Jun;103(6):400-403. doi: 10.1016/j.contraception.2021.02.004. Epub 2021 Feb 14.
Journal Impact Factor: 2.335; Times Cited: 0; Role: Protocol review and editing, site administration of multicenter trial, data acquisition, manuscript preparation, editing and review.

16. Schlafer R, Saunders JB, **Boraas CM**, Kozhimannil KB, Mazumder N, Freese R. Maternal and neonatal among incarcerated women who gave birth in custody. Birth. 2021 Mar;48(1):122-131. doi: 10.1111/birt.12524. Epub 2020 Dec 27.
Impact factor 3.689; Times cited 6; Role: Developed study concept and design, defined intellectual content, manuscript preparation, editing and review.

17. Thompson I, Sanders JN, Schwarz EB, **Boraas C,** Turok DK. Copper intrauterine device placement 6-14 days after unprotected sex. Contraception. 2019 Sep;100(3):219-221. doi: 10.1016/j.contraception.2019.05.015. Epub 2019 Jun 7.
Impact factor 2.335; Times cited 10; Role: Protocol review and editing, grant writing and submission, site administration of multicenter trial, data acquisition, manuscript preparation, editing and review.

18. Raymond EG, Tan YL, Comendant R, Sagaidac I, Hodorogea S, Grant M, Sanhueza P, Van Pratt E, Gillespie G, **Boraas C**, Weaver MA, Platais I, Bousieguez M, Winikoff B. Simplified medical abortion screening: a demonstration project. Contraception. 2018 Apr;97(4):292-296. doi: 10.1016/j.contraception.2017.11.005. Epub 2017 Nov 21. PMID: 29170088
Impact factor 2.335; Times cited 27; Role: Protocol review and editing, site administration of multicenter trial, data acquisition, manuscript preparation, editing and review.

19. **Boraas CM**, Chappell CA, Krajewski CM. Use of an Endotracheal Tube for Surgical Abortion Complicated by a Leiomyomatous Uterus: A Case Report. J Med Case Rep. 2017 August 25;11(1):236. doi: 10.1186/s13256-017-1408-y. PMID: 28838323.
Impact factor 1.07; *Times cited 1; Role: Developed case report design, defined intellectual content, conducted literature search, data acquisition, manuscript preparation, editing and*

review.

20. Paul J*, **Boraas CM**, Duvet M*, Chang JC. YouTube and the single-rod contraceptive implant: a content analysis. J Fam Plann Reprod Health Care. 2017 Jul;43(3):195-200. doi: 10.1136/jfprhc-2016-101593. Epub 2017 Jan 20. PMID: 28108504. *Impact factor 2.151, Times cited 15; Role: Developed study concept and design, defined intellectual content, manuscript preparation, editing and review.*

21. **Boraas CM**, Achilles SL, Cremer ML, Chappell CA, Lim SE, Chen BA. Synthetic osmotic dilators with adjunctive misoprostol for same-day dilation and evacuation: a randomized controlled trial. Contraception. 2016 Nov;94(5):467-472. PMID: 27241895.
Impact factor 2.335; Times cited 11; Role: Developed study concept and design, defined intellectual content, conducted literature search, data acquisition, manuscript preparation, editing and review.

22. Rapkin RB, Achilles SL, Schwarz EB, Meyn L, Cremer M, **Boraas CM**, Chen BA. Self-Administered Lidocaine Gel for Intrauterine Device Insertion in Nulliparous Women: A Randomized Controlled Trial. Obstet Gynecol. 2016 Sep;128(3):621-8. doi: 10.1097/ACOG.0000000000001596. PMID: 27500351. *Impact factor 4.982; Times cited 30; Role: Defined intellectual content, data acquisition, manuscript preparation, editing and review.*

23. Akinsete OO, Sides T, Hirigoyen D, Cartwright C, **Boraas C**, Davey C, Pessoa-Brandao L, McLaughlin M, Kane E, Hall J, Henry K. Demographic, clinical, and virologic characteristics of African-born persons with HIV/AIDS in a Minnesota hospital. AIDS Patient Care STDS. 2007 May;21(5):356-65. PMID: 17518528.
Impact factor 5.944; Times cited 37; Role: Data acquisition, manuscript preparation, editing and review.

Non-Peer-Reviewed Publications

1. Martins SL*, **Boraas CM.** Contraceptive counseling: an essential travel medicine service. J Travel Med. 2020 Jul 14;27(4):taaa023. doi: 10.1093/jtm/taaa023
Role: Commentary preparation, editing and review.

2. Miller KK*, Gewirtz O'Brien JR*, Sajady M, Argo T*, Chaisson N, **Boraas C.** Long Acting Reversible Contraception (LARCs): Beyond Birth Control. Minnesota Pediatrician monthly newsletter, February 2020. Available at: http://www.mnaap.org/long-acting-reversible-contraceptives-larcs-beyond-birth-control/
Role: Manuscript preparation, editing and review.

3. **Boraas CM**, Schwarz EB. Contraceptive Choice for Women with Obesity. Gynecology Forum. 2012 May;17(4):20-3.
Role: Developed review design, conducted literature search, manuscript preparation, editing and review.

Chapters in Books

1. Ralph JA and **Boraas CM.** Surgical Abortion Complications. In Press. Major Complications of Female Pelvic Surgery: A Multidisciplinary Approach. Hoffman M, Bochner B, and Hull T, eds., Springer Nature Publishing, Berlin, Germany.
   Role: Author

2. **Boraas CM.** A 32-Year-Old HIV-positive woman requesting IUD. 2019. *Office Gynecology: A Case-Based Approach, First Edition;* Chelmow D, Karjane N, Ricciotti H, Young A, eds., Cambridge University Press, New York, NY.
   Role: Author

3. **Boraas CM** and Keder LM. Intrauterine Contraception Insertion and Removal. In Press. *Atlas of Pelvic Surgery and Anatomy, First Edition*; Huh W and Kim K, eds., McGraw Hill Professional, New York, NY.
   Role: Author

4. **Boraas CM** and Keder LM. Contraceptive Implant Insertion and Removal. In Press. *Atlas of Pelvic Surgery and Anatomy, First Edition*; Huh, W. and Kim, K., eds, McGraw Hill Professional, New York, NY.
   Role: Author

5. **Boraas CM** and Keder LM. Female Sterilization. In Press. *Atlas of Pelvic Surgery and Anatomy, First Edition*; Huh, W. and Kim, K., eds, McGraw Hill Professional, New York, NY.
   Role: Author

Presentations

Invited Oral Presentations at International Professional Meetings, Conferences, etc.

1. **Boraas CM,** Nardos R, Ghebre R, Pace S, Chojnacki M. Obstetrics and Gynecology Medicine Panel. University of Minnesota Global Health Course. May 6, 2021. Virtual.
2. **Boraas CM.** Current Contraception Overview. American Refugee Committee Staff Development Conference. March 18-26, 2013. Sangkhlaburi, Thailand.
3. **Boraas CM.** Long-Acting Reversible Contraception – Implants. American Refugee Committee Staff Development Conference. March 18-26, 2013. Sangkhlaburi, Thailand.
4. **Boraas CM.** Long-Acting Reversible Contraception - Intrauterine Devices. American Refugee Committee Staff Development Conference. March 18-26, 2013. Sangkhlaburi, Thailand.

Invited Oral Presentations at National Professional Meetings, Conferences, etc.

1. **Boraas CM.** Asynchronous Medication Abortion: The MA-ASAP Research Study. Planned Parenthood Federation of America Maximizing Abortion Access Meeting. April 4, 2023. Minneapolis, MN.

2. **Boraas CM.** Asynchronous Medication Abortion: The MA-ASAP Research Study. Planned Parenthood Federation of America Medical Directors Council Annual Meeting. November 11, 2022. Tuscon, AZ.

3. **Boraas CM**, Ojanen-Goldsmith A, Torgrimson-Rojerio B, Hassan A*. Time for Action: The

impact of tear gas used by law enforcement on reproductive health. Society of Family Planning Annual Meeting. October 12, 2021. Virtual.

4. **Boraas CM**. Merck Nexplanon Extension Trial, Site Tips and Tricks. MK-8415-060 Lessons Learned – Recruitment and Retention Meeting. May 5, 2021. Virtual.

5. **Boraas CM** and Rapkin RB. Surgical Miscarriage Management in the Office: You Can Do It. ACOG Annual Clinical Meeting. April 30-May 2, 2021. Virtual.

6. **Boraas CM**, Kaneshiro B, Raymond E, Grant M. No Test Medical Abortion. Society of Family Planning Webinar. January 6, 2021. Virtual.

7. Borchert K, Wipf H*, Roeske E*, Clure C*, Traxler S, **Boraas CM.** Pregnancy of Unknown Location in Abortion Care: Management and Outcomes. National Abortion Federation Conference. April 2018. Seattle, WA.

8. **Boraas CM.** Interviewing Basics. Fellowship in Family Planning Career Development Workshop. July 23-24, 2017. Chicago, IL.

9. **Boraas CM.** Searching for a Position. Fellowship in Family Planning Career Development Workshop. July 23-24, 2017. Chicago, IL.

10. **Boraas CM** and Rapkin RB. Surgical Miscarriage Management in the Office: You Can Do It. ACOG Annual Clinical Meeting. May 7, 2017. San Diego, CA.

Invited Oral Presentations at Local and Regional Professional Meetings, Conferences, etc.

1. **Boraas, CM.** Induced Abortion for Genetic Counselors. University of Minnesota Genetic Counselor Graduate Student Education Presentation. November 13, 2023. Minneapolis, MN.

2. **Boraas, CM.** Satin, D. Janoski, E. Clinician responsibilities and vulnerabilities in the face of ethical and legal controversy. University of Minnesota Law 6854 Law, Biomedicine & Bioethics course. November 7, 2023. Minneapolis, MN.

3. **Boraas CM,** Hutto SL**.** Reproductive Health Skills Workshop. Simulation. University of Minnesota Medical School Obstetrics and Gynecology and Family Medicine Interest Groups Skills Night. March 20, 2023. Minneapolis, MN.

4. **Boraas CM,** Ruud M, Hassan A. Navigating and Innovating Women's Health Services, Policies and Access Issues. 17th Annual University of Minnesota Women's Health Research Conference. February 23, 2023. Virtual.

5. **Boraas CM** and Ralph JA. Post-Roe Implications for Reproductive Health Care and Beyond. University of Minnesota Department of Medicine Grand Rounds. December 8, 2022. Virtual.

6. **Boraas CM,** Hasday J, Walker S. Abortion Access After Dobbs. University of Minnesota Center on Women, Gender and Public Policy Hybrid Event. November 8, 2022. Minneapolis, MN.

7. **Boraas, CM.** Satin, D. Janoski, E. Clinician responsibilities and vulnerabilities in the face of ethical and legal controversy. University of Minnesota Law 6854 Law, Biomedicine & Bioethics course. November 8, 2022. Minneapolis, MN.

8. **Boraas, CM.** Trauma-informed Gyn and Pregnancy Care: How we use Language in the Exam Room. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference. February 14, 2022. Minneapolis, MN.

9. **Boraas, CM.** Contraception for the Medically Complex Patient. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference, February 14, 2022. Minneapolis, MN.

10. **Boraas, CM.** Induced Abortion for Genetic Counselors. University of Minnesota Genetic Counselor Graduate Student Education Presentation. December 13, 2021. Minneapolis, MN.

11. **Boraas, CM.** Ectopic pregnancy and induced abortion. University of Minnesota Womens' Health Nurse Practitioner and Nurse Midwifery Education Presentation. September 17, 2021. Minneapolis, MN

12. **Boraas CM.** Dilation and Curettage Papaya Workshop. Simulation. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Bootcamp. June 21, 2021. St. Paul, MN.

13. **Boraas, CM.** Induced Abortion for Genetic Counselors. University of Minnesota Genetic Counselor Graduate Student Education Presentation. December 14, 2020. Minneapolis, MN.

14. **Boraas, CM.** Breastfeeding Basics for the Ob/Gyn Resident. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference. December 28, 2020. Minneapolis, MN.

15. **Boraas CM.** Introduction to Family Planning. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Bootcamp. June 22, 2020. St. Paul, MN.

16. **Boraas CM.** Dilation and Curettage Papaya Workshop. Simulation. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Bootcamp. June 22, 2020. St. Paul, MN.

17. **Boraas CM.** Ectopic Pregnancy. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference. June 22, 2020. Minneapolis, MN.

18. **Boraas CM.** Pregnancy of Unknown Location and Early Pregnancy Loss. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference. May 4, 2020. Minneapolis, MN.

19. Wise M*, **Boraas CM.** Veracept Phase II Trial. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Journal Club. May 4, 2020. Minneapolis, MN.

20. **Boraas CM.** Breech Vaginal Delivery. Simulation. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference. February 24, 2020. Minneapolis, MN.

21. **Boraas, CM.** Global Maternal Mortality. University of Minnesota Global Pediatrics Education Presentation. February 6, 2020. Minneapolis, MN.

22. **Boraas CM.** Important Conversations – Challenging Patients, Language, Race and Racism. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference. February 27, 2020. Minneapolis, MN.

23. **Boraas CM,** Pacala K**.** Dilation and Curettage Papaya Workshop. Simulation. University of Minnesota Medical School Obstetrics and Gynecology Interest Group Skills Night. February 27, 2020. Minneapolis, MN.

24. **Boraas CM**, Finn K, McKegney C, Ball C. Highlighting work as an abortion provider. Lunch Lecture. Medical Students for Choice. University of Minnesota Medical School. January 13, 2020. Minneapolis, MN.

25. Gerwitz-O'Brien J*, Donlon T*, **Boraas, CM.** Advocacy in Action. Becoming a Doctor Course. University of Minnesota Medical School. January 8, 2020. Minneapolis, MN.

26. **Boraas, CM.** Contraception for Endocrine Fellows. University of Minnesota Endocrinology Fellows Education Presentation. November 21, 2019. Minneapolis, MN.

27. **Boraas, CM.** Induced Abortion for Genetic Counselors. University of Minnesota Genetic Counselor Graduate Student Education Presentation. November 18, 2019. Minneapolis, MN.

28. **Boraas, CM.** Ectopic pregnancy and induced abortion. University of Minnesota Womens' Health Nurse Practitioner and Nurse Midwifery Education Presentation. September 13, 2019. Minneapolis, MN.

29. **Boraas CM.** Adolescent Gynecology. University of Minnesota Department of Pediatrics Resident Block Education Conference. August 9, 2019. Minneapolis, MN.

30. **Boraas CM.** Breech Vaginal Delivery. Simulation. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference. February 18, 2019. Minneapolis, MN.

31. **Boraas CM.** LARC Tips and Tricks. University of Minnesota Department of Obstetrics. Gynecology and Women's Health Resident Curriculum Conference. February 11, 2019. Minneapolis, MN.

32. Kummer L, **Boraas CM**, Chomilo N. Making an Impact through Advocacy. Becoming a Doctor Course. University of Minnesota Medical School. January 9, 2019. Minneapolis, MN.

33. **Boraas CM** and Flanagan S**.** Uterine Artery Embolization in Obstetric Hemorrhage. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Grand Rounds. December 18, 2018. Minneapolis, MN.

34. **Boraas CM.** Termination of Pregnancy in the Second Trimester. Fetal Diagnosis and Treatment Center. University of Minnesota Medical School. December 6, 2018. Minneapolis, MN.

35. **Boraas CM.** Contraception Overview. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Bootcamp. June 19, 2018. Minneapolis, MN.

36. **Boraas CM.** Introduction to Abortion. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Bootcamp. June 19, 2018. Minneapolis, MN.

37. **Boraas CM.** Cesarean Scar Pregnancy. Fairview Infusion Center Continuing Medical Education. May 25, 2018. Minneapolis, MN.

38. **Boraas CM.** Abortion Cervical Preparation. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference. February 26, 2018. Minneapolis, MN.

39. **Boraas CM.** Dilation and Evacuation versus Induction of Labor for Termination of Pregnancy. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference. February 26, 2018. Minneapolis, MN.

40. **Boraas, CM.** Ectopic pregnancy and induced abortion. University of Minnesota Womens' Health Nurse Practitioner and Nurse Midwifery Education Presentation. December 1, 2017. Minneapolis, MN.

41. **Boraas, CM.** Global Maternal Mortality: Focus on Delivery. University of Minnesota Department of Pediatrics Residency Block Education Presentation. Hennepin County Medical Center. November 17, 2017. Minneapolis, MN.

42. **Boraas CM.** Challenging Patient Encounters. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference. October 30, 2017. Minneapolis, MN.

43. **Boraas, CM,** Terrell, CA, Hutto, SL. Abortion Care at UMMC. University of Minnesota Medical Center ER Department Grand Rounds. September 28, 2017. Minneapolis, MN.

44. **Boraas, CM.** Contraception for Patients with Medical Conditions. Continuing Education Presentation. Planned Parenthood MN-ND-SD. August 8 and 12, 2017. St. Paul, MN.

45. **Boraas, CM**, Terrell, CA, Hutto, SL. Abortion Care at UMMC. UMMC Peri-operative Education Meeting. April 11, 2017. Minneapolis, MN.

46. **Boraas CM.** Mifepristone: Politics and Science in Practice, University of Minnesota Department of Obstetrics, Gynecology and Women's Health Grand Rounds. February 21, 2017. Minneapolis, MN.

47. **Boraas CM.** Breech Vaginal Delivery. Simulation. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference. February 6, 2017. Minneapolis, MN.

48. **Boraas CM** and Ball CE**.** Family Planning Questions and Answers, Planned Parenthood MN-ND-SD Clinician Days. January 6, 2017. St. Paul, MN.

49. **Boraas CM.** Abortion Policy. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference. September 12, 2016. Minneapolis, MN.

50. **Boraas CM.** Abortion Cervical Preparation. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference. September 12, 2016. Minneapolis, MN.

51. **Boraas CM.** Dilation and Evacuation versus Induction of Labor for Termination of Pregnancy. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference. September 12, 2016. Minneapolis, MN.

52. **Boraas CM.** Challenging Patient Encounters. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference. August 29, 2016. Minneapolis, MN.

53. **Boraas CM.** Introduction to Abortion. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Bootcamp. June 20, 2016. Minneapolis, MN.

54. **Boraas CM.** Family Planning Update. University of Minnesota Department of Obstetrics, Gynecology and Women's Health and MN ACOG Autumn Seminar. November 20, 2015. Minneapolis, MN.

55. **Boraas CM.** Introduction to Abortion. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Bootcamp. June 23, 2015. Minneapolis, MN.

56. **Boraas CM** and Ball CE**.** Family Planning Questions and Answers. Planned Parenthood MN-ND-SD Clinician Days. October 1, 2014. St. Paul, MN.

57. **Boraas CM** and Eggleston K**.** Family Planning Questions and Answers. Planned Parenthood MN-ND-SD Clinician Days. September 30, 2014. St. Paul, MN.

58. **Boraas CM.** Family Planning in Conflict Settings. University of Pittsburgh Global Health and Underserved Lecture Series. February 10, 2014. Pittsburgh, PA.

59. **Boraas CM.** Why Women 'Wait': Abortion in the Second Trimester. University of Illinois at Chicago Department of Obstetrics and Gynecology Grand Rounds. January 31, 2014. Chicago, IL.

60. **Boraas CM.** Abortion and Long-Term Health Outcomes: Examining the Evidence. University of Pittsburgh Department of Obstetrics, Gynecology and Reproductive Sciences Gynecology Conference. January 6, 2014. Pittsburgh, PA.

61. **Boraas CM.** Misoprostol in Gynecologic Practice. Magee-Womens Hospital Gynecology Conference. University of Pittsburgh. November 11, 2013. Pittsburgh, PA.

62. **Boraas CM.** Towards Equity: Reproductive Health along the Thai-Burma Border. University of Pittsburgh Department of Obstetrics, Gynecology and Reproductive Sciences Gynecology Conference. July 8, 2013. Pittsburgh, PA.

63. **Boraas CM.** Fit to be Tied: Sterilization in the USA. University of Pittsburgh Department of Obstetrics, Gynecology and Reproductive Sciences Gynecology Conference. February 22, 2013. Pittsburgh, PA.

64. **Boraas CM.** Health Reform 101: What's in it for Women? University of Pittsburgh Medical School Medical Students for Choice Lecture Series. November 2, 2012. Pittsburgh, PA.

65. **Boraas CM.** Health Reform 101: What's in it for Women? University of Pittsburgh Department of Obstetrics, Gynecology and Reproductive Sciences Gynecology Conference. October 22, 2012. Pittsburgh, PA.

66. **Boraas CM.** Maternal Mortality: The Promise of Progress. The Ohio State University Department of Obstetrics and Gynecology Grand Rounds. May 17, 2012. Columbus, OH.

67. **Boraas CM.** Current Contraception Overview. Kilimanjaro Christian Medical College Department of Obstetrics and Gynecology Grand Rounds. March 10, 2011. Moshi, Tanzania.

68. **Boraas CM.** Morbidity and Mortality Report – Case of the Lost IUD. The Ohio State University Department of Obstetrics and Gynecology Grand Rounds. September 2, 2010. Columbus, OH.

69. **Boraas CM.** Malaria in Pregnancy. University of Minnesota Department of Obstetrics, Gynecology and Women's Health Resident Curriculum Conference. August 27, 2010. Minneapolis, MN.

Peer-Reviewed Oral Presentations at National Professional Meetings, Conferences, etc.

1. Gawron LM, Roe AH, **Boraas CM,** Bernard C, Westhoff CL, Culwell K, Turok DK. Bleeding and pain over time with a novel low-dose copper intrauterine device with a flexible nitinol frame. Society of Family Planning Meeting. October 28-30, 2023.

2. Faherty E*, Smith K, **Boraas C**, Lofgren S, Rothenberger M, and Enns E. Using mixed methods to identify and evaluate strategies to improve uptake of Expedited Partner Therapy for *chlamydia trachomatis* infection in Minnesota. Society for Medical Decision Making Virtual Meeting, October 18-20, 2021.

3. Martins SL* and **Boraas CM**. Willingness to use the 'male' birth control pill: Demographic and reproductive health correlates among a community-based sample of U.S. men. Annual Meeting of the Society for Pediatric and Perinatal Epidemiologic Research. June 21-22, 2021. Virtual.

4. Upadhyay U, Raymond E, Koenig L, Coplon L, Gold M, Kaneshiro B, **Boraas C**, Winikoff B. Safety and Efficacy of No-test Medication Abortion: A Retrospective Multi-Site Study. National Abortion Federation Meeting. May 11-12, 2021. Virtual.

5. Anger H, Raymond E, Chong E, Haskell S, Grant M, **Boraas C**, Tocce K, Banks J, Coplon L, Shochet T, Platais I. Comparison of clinical outcomes among patients who did and did not have a screening ultrasound or pelvic exam prior to obtaining medciaion abortion services via direct-to-patient telemedicine. National Abortion Federation Meeting, May 11-12, 2021. Virtual

6. Sayarath M*, Gerwitz O'Brien J*, Shramko M*, Argo T*, Brown E, Mishra P, **Boraas CM** McRee, A. Assessing the Gap in Sexual and Reproductive Health Services among Hospitalized Adolescents. Works in Progress Session. Society of Adolescent Medicine Conference, March 11, 2020. San Diego, CA. Due to COVID-19 related conference cancellation, this invited presentation was not given.

7. Borchert K, Wipf K*, Roeske E*, Clure C*, Traxler S, **Boraas CM**. Pregnancy of Unknown Location in Abortion Care: Management and Outcomes. National Abortion Federation Conference, April 23, 2018. Seattle, WA.

8. **Boraas CM**, Thompson I, Turok DK, Baldauf E, Borrero S, Schwarz EB, Sanders JN. Extending the window for insertion of the intrauterine device. American Society for Reproductive Medicine Scientific Congress, October 19, 2016. Salt Lake City, UT.

9. **Boraas CM**, Isley MM. Chlamydia and gonococcal infections and screening in women receiving intrauterine devices in a resident obstetrics and gynecology clinic. The Ohio State Department of Obstetrics and Gynecology Resident Research Day. October 2011. Columbus, OH.

Poster Abstract Presentations at National Professional Meetings, Conferences, etc.

1. Carroll AL, Strauss AM, Philipps, NM, Kaczmarczik KD, Shakur Z, Ramirez G, Klc TR, Tessier KM, **Boraas CM.** Concurrent administration of depot medroxyprogesterone acetate with mifepristone may decrease medication abortion efficacy: A retrospective cohort study. Society of Family Planning Meeting. October 28-30, 2023.

2. Carroll AL, Strauss AM, Philipps, NM, Kaczmarczik KD, Shakur Z, Ramirez G, Klc TR, Tessier KM, **Boraas CM.** Concurrent placement of an etonogestrel implant with mifepristone does not decrease medication abortion efficacy: A retrospective cohort study. Society of Family Planning Meeting. October 28-30, 2023.

3. Mahoney M, Ojanen-Goldsmith A, Hassan A, **Boraas CM**. I waited years for an option other than vasectomy": Interest in new contraceptive methods for sperm among people with vasectomies. 2023 IAPHS Annual Meeting. October 2-5, 2023. Baltimore, MD.

4. Raymond EG, Frye LJ, **Boraas CM**, Tocce K, Gingras S, Firstenberg BS, Almquist A, ORtega C, Mahoney M, Hernandez K, Blumenthal P, Winikoff B. "MA-ASAP": Asynchronous, Web-Based Provision of Medication Abortion. National Abortion Federation Annual Meeting. April 30-May 2, 2023. Denver, CO.

5. **Boraas CM**, Wise M, Miller J, Jafari N, Martins S. New male contraception: Yea or Nay? Correlates of supportive attitudes in a community-based sample of men and women. University of Minnesota Annual Women's Health Research Conference. February 23, 2023. Virtual.

6. Groene E*, **Boraas C**, Smith K, Lofgren S, Rothenberger M, Enns E. Offering Expedited Partner Therapy: a mixed methods study of Minnesota health providers. 2022 STD Prevention Conference. September 19-22, 2022. Virtual.

7. Keonig LR, Raymond EG, Gold M, **Boraas C**, Kaneshiro B, Winikoff B, Coplon L, Upadhyay UD. Time to Care Among Patients Who Receive Medication Abortion with History-Based Screening in the United States. Population Association of America Annual Meeting. April 6-9, 2022. Atlanta, GA.

8. Creinin M, Gawron L, Westhoff C, **Boraas CM,** Blumenthal P, Turok D. Phase 3 data of a novel low-dose copper intrauterine device with a nitinol frame: 1-year outcomes. ACOG Annual Clinical Meeting. April 30-May 2, 2021. Virtual.

9. Martins S*, Miller JJ*, Wise M*, Jafari N*, **Boraas CM.** Willingness to Use Novel Reversible Male-Controlled Contraceptive Methods in a Community-Based Sample of Adult Men. ACOG Annual Clinical Meeting. April 30-May 2, 2021. Virtual.

10. Wise M*, Martins S*, Tessier K, Traxler SA, **Boraas CM.** Success of Intrauterine Device Placement in Adolescents at Planned Parenthood. ACOG Annual Clinical Meeting. April 30-May 2, 2021. Virtual.

11. Miller JJ*, Martins S*, Mahoney MA*, Tessier K, Traxler SA, **Boraas CM**. Correlates of long acting reversible contraception uptake at 30 days following medication abortion. ACOG Annual Clinical Meeting. April 30-May 2, 2021. Virtual.

12. Faherty E*, **Boraas CM,** Smith K, Lofgren S, Rothenberger M, and Enns E. Expedited Partner Therapy for Sexually Transmitted Infections in Minnesota: A Mixed-Methods

Review of Current Practices and Barriers to Implementation. ISPOR 2021, May 17-20, 2021. Virtual.

13. Gerwitz O'Brien J*, Shramko M*, Sayarath M*, Brown E, Argo T*, **Boraas CM,** McRee A. Missed Opportunities to Provide Comprehensive Sexual and Reproductive Healthcare among Hospitalized Adolescents. Society for Adolescent Health and Medicine Annual Meeting. March 10-12, 2021. Due to COVID-19 related conference cancellation, this peer-reviewed poster was presented in electronic format.

14. Henke L*, Martins S*, Bangdiwala A, **Boraas CM**. Barriers to Obtaining Long-Acting Reversible Contraception Among Low-Income Women. ACOG Annual Clinical Meeting, April 24-27, 2020, Seattle, WA. Due to COVID-19 related conference cancellation, this peer-reviewed poster was presented in electronic format.

15. Gerwitz O'Brien J*, Shramko M*, Sayarath M*, Argo T*, Brown E, Mishra P, **Boraas CM** McRee A. Missed Opportunities to Provide Comprehensive Sexual and Reproductive Healthcare among Hospitalized Adolescents. Pediatric Research, Education and Scholarship Symposium. April 24, 2020. Minneapolis, MN.

16. Argo T*, Gerwitz O'Brien J*, Miller KK*, Prince A, Bahr T*, **Boraas CM**, Chaisson N, Borman-Shoap E. No Missed Opportunities: A trainee-driven long acting reversible contraceptive workshop for pediatric primary care clinicians. Society of Adolescent Medicine Conference. March 11, 2020. San Diego, CA.

17. Argo T*, Miller KK*, Bahr T*, Prince A, **Boraas CM**, Chaisson N, Borman-Shoap E, Gerwitz O'Brien J*. No Missed Opportunities: A trainee-driven long acting reversible contraceptive workshop for pediatric primary care clinicians. Minnesota American Academy of Pediatrics Conference. May 3, 2019. Minneapolis, MN.

18. Borchert K, Wipf K*, Roeske E*, Clure C*, Traxler S, **Boraas CM**. Pregnancy of Unknown Location in Abortion Care: Expectant Management and Ectopic Pregnancy Outcomes. National Abortion Federation Conference. May 6, 2019. Chicago, IL.

19. Raymond E, Tan Y, Comendant R, Sagaidac I, Platais I, Grant M, Sanhueza P, Van Pratt E, Bousiequez M, Gillespie G, **Boraas CM**, Weaver M. Simplified Medical Abortion Screening: A Pilot Study. National Abortion Federation Conference. April 23, 2017. Montreal, Canada.

20. Paul J*, Duvet M, **Boraas CM**. YouTube and the contraceptive implant: a content analysis. North American Forum on Family Planning. October 11, 2014. Miami, FL.

21. Lewis L*, **Boraas CM**, Dunn SA, Krans EE. Postpartum contraceptive intention and initiation among opioid dependent women. North American Forum on Family Planning. October 11, 2014. Miami, FL.

22. **Boraas CM**, Achilles SL, Cremer ML, Chappell CA, Chen BA. Dilapan-S with adjunctive misoprostol for same-day dilation and evacuation: a randomized controlled trial. North American Forum on Family Planning. October 11, 2014. Miami, FL.

23. Rapkin RB, Achilles SL, **Boraas C**, Cremer M, Schwarz EB, Chen BA. Self-administered lidocaine gel for intrauterine device insertion in nulliparous women: a randomized controlled trial. ACOG Annual Clinical Meeting. April 28, 2014. Chicago, IL.

24. **Boraas CM**, Isley MM. Chlamydia and gonococcal infections and screening in women receiving intrauterine devices in a resident obstetrics and gynecology clinic. North American Forum on Family Planning. October 23, 2012. Denver, CO.

25. **Boraas CM**. Emergency contraception knowledge, attitudes and practices – A survey of future providers in Minnesota and Guatemala. Global Health Council Conference. 2006. Washington, DC.

26. **Boraas CM**, Asante L, Heloo B. Female condom knowledge, attitudes and practices in Ghana's highest HIV prevalence regions. Global Health Education Consortium.

TEACHING AND CURRICULUM DEVELOPMENT

University of Minnesota

Course List

Undergraduate Courses

Annual speaker, The Future Physician II: The Life and Work of a Physician 2016-2020

Professional Medical Courses

Becoming a Doctor II: Making an Impact Through Advocacy Facilitator 2019-present

Obstetrics and Gynecology Core Clerkship Problem-Based Learning Facilitator 2018-present

Obstetrics and Gynecology Preceptor, Rural Physicians Associate Program 2017-present

Obstetrics and Gynecology Core Clerkship Attending Physician 2017-present

Participation two times per academic year (4 week rotation) as a faculty problem-based learning mentor for the third-year students during the clerkship in Obstetrics and Gynecology. I also present a one-hour lecture on the clinical aspects of abortion and contraception approximately four times per year to the entire clerkship. Additionally, students can spend one day with me at Planned Parenthood MN-ND-SD or Whole Woman's Health learning about reproductive choice and counseling, medical and surgical abortion, and contraceptive counseling.

Advanced Family Planning Elective Attending Physician 2015-present

The purpose of this elective is to learn more about the subspecialty of family planning. During the two-four week elective, students will be present in several clinical settings, including Planned Parenthood MN-ND-SD, Whole Woman's Health, Women's Health Specialists clinic, and the operating room for D&E procedures. The student also makes a presentation on a topic from the current medical literature to the family planning faculty and staff.

Curriculum Development

<u>Post Graduate Medical Education</u>

Global Pediatrics Curriculum 2019-present

Developed lectures for pediatrics providers about maternal morbidity and mortality.

Global Obstetrics Simulation for Pediatrics Residents 2017-present

Developed a yearly simulation curriculum for delivery of a baby in the case of emergency for Pediatrics residents.

Fellowship in Family Planning, Director 2016-present

I serve as the future director of the family planning fellowship for graduated obstetrics and gynecology residents. This position has involved developing clinical, research and advocacy curriculum, which was approved by the University of Minnesota Board of Regents in Fall 2016. Application is currently under review by the national office of the Fellowship in Family Planning.

Ryan Residency in Abortion and Family Planning, Director 2015-present

I serve as the director of the family planning rotation for second year residents. This involves teaching and supervising the resident at Planned Parenthood in performing surgical abortions up to 23 6/7 weeks and medical abortions up to 10 0/7 weeks and in the operating room for D&E procedures up to 23 6/7 weeks. I also supervise office hysteroscopic sterilization and OR laparoscopic and hysteroscopic sterilization procedures. For residents who choose not to perform abortions, their education includes learning about early pregnancy counseling and decision making as well as performing ultrasounds for pregnancy dating.

Undergraduate Medical Education

Consultant, Endocrine and Reproductive Health Course 2021-present

Consultant, Diversity, Equity and Inclusion Thread 2021-present

Nationally Available Published Curricula

Boraas, CM. Invited Lecturer *Obstetric Emergencies: Focus on Delivery.* Clinical Tropical Medicine & Online Global Health Curriculum. Editors Kristina Krohn, Brett Hendel-Paterson, and William Stauffer. Available at https://med.umn.edu/dom/education/global-medicine/courses-certificates/online/global-health-curriculum. The entire curriculum consists of 7 modules with over 180 hours of online material, including reviews and assessments. Pair with the in-person course, the curriculum qualifies participants to sit for the CTropMed and DTMH. With over 1300 unique enrollees from 47 states and over 28 countries, this curriculum helps providers learn how to address health disparities across the globe. Curriculum originally launched 2006, converted to online in 2010, and last updated in 2021.

Boraas, CM. *Maternal Mortality.* GPEDS (Global Pediatric Education Series) for Medical Students. Clerkship Directors: Winter J, Danich E, Howard C. This Virtual Medical Student Clerkship consists of 4 modules (approximately 25 hours) of online content covering topics in global child health. Available for enrollment September 2020.

Boraas, CM. *Maternal Mortality.* GPEDS 2.0 (Global Pediatric Education Series). Editors Winter J, Danich E, Howard C. Available at globalpeds.umn.edu/gpeds. Curriculum consists of 4 modules (approximately 25 hours) of online content on global child health that serves as the primary global health curriculum for pediatric residents at multiple institutions. The content is also available to individual subscribers for CME credit. Curriculum originally launched May 2014, Updated November 1, 2019.

ADVISING AND MENTORING

Undergraduate Student Activities

Research Mentor, B.A. Candidate 01/2021-06/2023

Graduate Student Activities

PhD Candidate 06/2022-present

MPH Candidate 06/2022-6/2023

MPH Candidate 06/2022-6/2023

TRACT TL1 Program Mentor, PhD Candidate 07/2020-06/2022

Master's Theses Directed

MS in Medical Device Innovation Candidate 06/2022-12/2022

MPH Candidate 09/2015-12/2015

Professional Student Activities

Twin Cities Medical Society Public Health Advocacy Fellowship Mentee Jun 2020-2021

Medical student research advisees Jul 2015-2018

Medical student advisees Jul 2015-2018

Clinical Supervision

3rd year medical students on Education in Pediatrics Along the Curriculum, 2017-present
3rd and 4th year medical students on OB/GYN clerkship rotations at Women's Health Specialists, 2015 – present
3rd and 4th year medical students on family planning elective rotations at Women's Health Specialists and community sites, 2015 – present

Residents Supervised

Clinical Supervision, 1st year residents on general gynecology rotations at Women's Health Specialists, 2015 – present

Clinical Supervision, 4th year residents on general gynecology rotations at Women's Health Specialists, 2015 – present

Clinical Supervision, 2nd year residents on general obstetrics rotations at UMMC L&D (The Birthplace), 2015 – present

Clinical Supervision, 3rd year residents on general obstetrics rotations at UMMC L&D (The Birthplace), 2015 – present

Clinical Supervision, 2nd year residents on family planning rotation at Planned Parenthood Minnesota, North Dakota, South Dakota, 2014 – present

Post Doctoral Fellows Supervised

Adolescent Health Fellowship September 2018 - June 2021

Post-doctoral Fellowship May 2019 - May 2020

Other Mentoring Activities

Faculty Advisor 2016-present
University of Minnesota Obstetrics and Gynecology Interest Group

Faculty Advisor 2016-present
University of Minnesota Medical Students for Choice

CLINICAL SERVICE

Clinical Leadership Accomplishments
Associate Medical Director, Planned Parenthood MN-ND-SD 2014-present

Clinical Service Responsibilities
Obstetrics, Gynecology, Midwifery and Family Planning Division 2015-present
Attending Physician
Consulting Physician
Clinics: 2 half days per week, 2015-present
OR: 1 half day per week, 2015-present
Planned Parenthood MN-ND-SD 2014-present
Clinics: 2 half days per week, 2016-present; 3 half days per week, 2015-2016; 4 half days per week 2014-2015
Whole Woman's Health 2014-present
Clinics: 2 half days per week, 2016-present; 1 half day per week, 2015-2016; 3 half days per week, 2014-2015

PROFESSIONAL SERVICE AND PUBLIC OUTREACH

Service To The Discipline/Profession/Interdisciplinary Area(s)

Editorships/Journal Reviewer Experience
Journal Reviewer, Obstetrics and Gynecology 2017-present
Recognized as Top 10% Peer Reviewer 2020
Journal Reviewer, Contraception 2013-present

Organization of conferences, workshops, panels, symposia
Member, University of Minnesota Department of Obstetrics, Gynecology and Women's Health and MN ACOG Joint Autumn Seminar Planning Committee 2016
Role: Organized educational themes and curricula, recruited speakers.

Member, University of Minnesota Department of Obstetrics, Gynecology and Women's Health and MN ACOG Joint Autumn Seminar Planning Committee 2015
Role: Organized educational themes and curricula, recruited speakers.

National Committee Memberships
Member, Society of Family Planning Finance Committee 2021-present
Member, Society of Family Planning Research Implementation Interest Group 2021-present
Member, M-POWER Advisory Committee 2021-present
Member, No Test Medication Abortion Safety and Outcomes Working Group 2021-2023
Member, Complex Family Planning Fellowship Core Education Working Group 2021-2023
Member, Complex Family Planning Fellowship Education Committee 2020-2021
Member, Society of Family Planning Program Committee 2019-2020
Member, North American Forum on Family Planning Scientific Committee 2018-2020

Member, Society of Family Planning Audit Committee	2016-2018
Member, ACOG Online Learning in Ob-Gyn Advisory Committee	2014-2022
Member, ACOG Global Health Committee	2015-present
Member, Fellowship in Family Planning Guide to Learning Revision Subcommittee,	2016-2018

State Committee Memberships

Member, Minnesota Medical Association Health Equity Task Force	2020
Member, Minnesota PRAMS Advisory Committee	2017-present
Member, Reproductive Health Access Project, MN cluster	2017-present
Member, MN ACOG Advisory Council	2016-present
Member, MN ACOG Legislative Committee	2015-present

Public Advocacy

Physician Advocate, Minnesota ACOG Day at the Capitol	3/8/2022
Physician Advocate, Minnesota Medical Association Day at the Capitol	3/4/2020
Member, Minnesota Doctors for Health Equity	2018-present
Physician Advocate, Minnesota Medical Association Day at the Capitol	2/13/2019
Physician Advocate, Minnesota Medical Association Day at the Capitol	3/14/2018
Physician Advocate, Minnesota Medical Association Day at the Capitol	2/15/2017
Speaker, Press Conference on MN H.F. 411/S.F. 281, Physician's Integrity Act	1/23/2017
Physician Advocate, Minnesota Medical Association Day at the Capitol	3/23/2016

Service to the University/Medical School/Department

University of Minnesota

University-wide Service

Member, Medical School Faculty Advisory Committee	2022-present
Judge, Global Health Case Competition	2022
Faculty, Walter H. Judd Fellowships Selection Committee	2018
Faculty, Center for Global Health and Social Responsibility	2016-present
Chair, Students' International Health Committee	2002-2008
Representative, Center for Health Interprofessional Programs	2002-2004
Vice President, Student Senate, University of Minnesota School of Public Health,	2003

Medical School Service and Intercollegiate Service

Participant, Master Mentor Program	2017-2020
Member, Medical School Admissions Committee	2007-2008, 2018-2020
Member, Learning Environment Rounds	2017-2019
Member, Essentials of Modern Medicine Curriculum Initiative	2007-2008
Member, Med2010 Education Initiative	2007-2008
Representative, Student Council	2004-2008
Representative, Education Council	2004-2008

Department/Unit Service

Member, ARTS Committee	2020-present
Member, Residency Program Evaluation Committee	2016-present
Member, Clinical Competency Committee	2016-present

Member, Education Council	2016-present
Member, Residency Interview Committee	2016-present
Moderator, Research Day	2016, 2019

M Health Fairview Service

Member, UMMC Obstetric Case Review Committee	2022-present
Member, Perinatal Loss Policy Committee	2021-present
Member, Termination of Pregnancy Policy Committee	2020-present

University of Pittsburgh

Medical School Service and Intercollegiate Service

Fellow Advisor, Medical Students for Choice	2012-2014

The Ohio State University

Department/Unit Service

Resident Supervisor, Columbus Free Clinic	2010-2012
Resident Advisor, Obstetrics and Gynecology Interest Group	2009-2012

St. Olaf College, Northfield, MN

University-wide service

Co-Founder, Helping Overcome Poverty through Education (H.O.P.E.)	2000-2001

Community Outreach Activities

Family Planning Consultant, Teen Annex Clinic	2021-present
Family Planning Consultant, Alight	2019-present
Mentor, Upward Bound, St. Paul, MN	2004-2008
Global Health Volunteer, Mano a Mano Organization, St. Paul, MN	2004-2008